UV Sensor "UV-Arc"

sglux
The UV Experts

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

GENERAL FEATURES

The “UV-Arc” is a G3/4'' 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.

GENERAL SPECIFICATIONS

Fixed Specifications **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 sensitivitsy	UVC
Measuring range	400nW/cm² to 400µW/cm²

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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, VOUT=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

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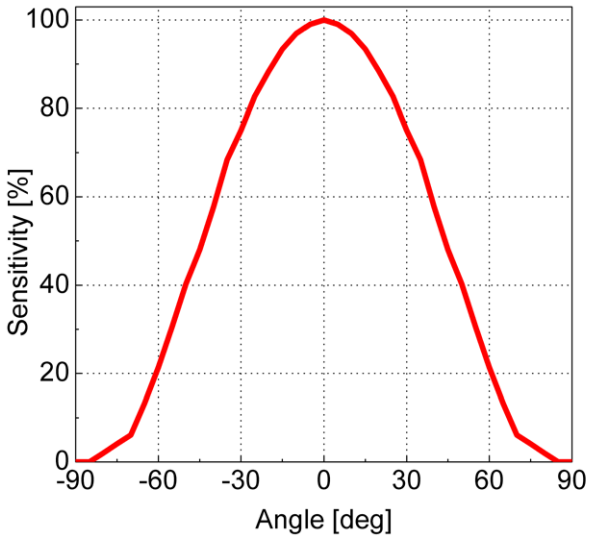
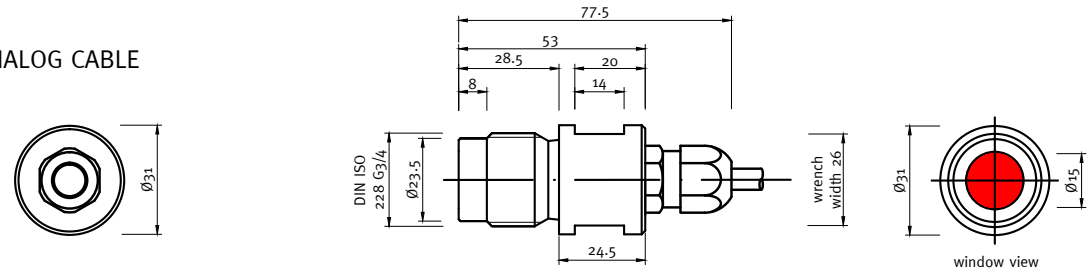
FIELD OF VIEW



DRAWING (values in mm)

ANALOG CABLE



Sensor Probes Overview

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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 o 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)

UV-Wireless
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. Also available as UV-Water-G1/4, G3/4" thread

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 avaliable 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