UVS-100T

Digital UV and temperature sensor with RS-485 interface

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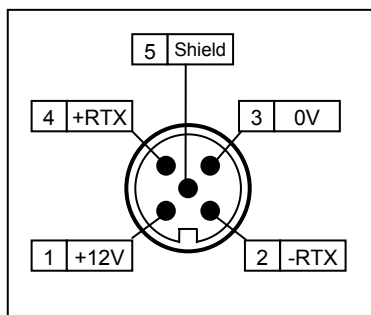**83 – 140 Gniew   info@titanium.com.pl**
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Description: UVS-100T is complete digital, computerized UV sensor with RS-485 interface housed in case integrated with measuring window. Sensor can take measurements in 8 measuring ranges from 5 μWcm^{-2} (50 mWm^{-2}) to 100 $mWcm^{-2}$ (1000 Wm^{-2}). Temperature sensor installed inside provides measurements in range from 0°C to +80°C with resolution of 1°C. Maximum distance between sensor and monitor can reach up to 1000 m due to RS-485 interface bus transceiver installed in UVS-100T.

Fig. 1. Digital sensor UVS-100T

Basic parameters of UVS-100T

Design:	case integrated with measuring window
Dimensions:	47 x 57 mm
Thread:	G1 Whitworth
Weight:	150 g
Spectral range:	330 – 720 nm
Operating temperature:	0 to +60°C
Cable:	4-lead, shielded, 2x2 twisted pair
Cable length:	up to 1000 m
Interface:	2-wire RS-485
Bus terminator:	built-in, 150 ohm
Protocol:	PLS Q&R binary, other protocols on request
Supply voltage:	+12 VDC
Current consumption:	10mA max
Connector:	5-pin M12x1 sensor male connector
Connector signals:	1. +12V (power supply)
	2. –RTX (RS-485)
	3. 0V (power supply ground)
	4. +RTX (RS-485)
	5. Shield
Measuring mode:	auto-range, fixed range
Measuring ranges:	8 internal ranges providing sensing range from 50 mWm^{-2} (5 μWcm^{-2}) to 1000 Wm^{-2} (100 $mWcm^{-2}$)
UV display:	relative in % of nominal value, absolute in approximated Wm^{-2} (not calibrated)

Temperature measuring range: 0ºC to +80ºC, resolution ±1°C

Signal name	UVS-100T side	UVM-200 side	Comments
	Female cable M12x1 5-pin connector	UVM-200 4-pin connector: UVS-200 sensor bus	
Sensor DC supply +12V	1	+12V	Twisted pair 1
RS-485: -RTX	2	-RTX	Twisted pair 2
Sensor DC supply: GND	3	0V	Twisted pair 1
RS-485: +RTX	4	+RTX	Twisted pair 2
Shield	5	0V or PE at UVM-200 installation site	Cable shield

Fig. 2. Sensor connector and cable: M12x1 male connector signal pin-out (left) – cable connections with UVM-200 (right)
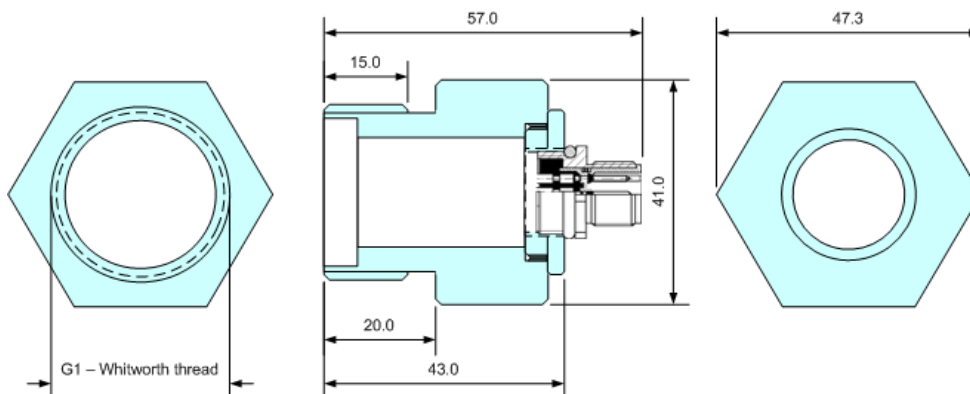

Fig. 3. UVS-100T - dimensions

230 VAC

UV monitor

UV lamp driver

PLS Systems   UVM - 200

NORM   WARN   ALARM

9.234W·m²
92.3 %

↑   ←   →   ↓

Esc   Auto   Clear   Restore
Fn   NORM   CNT   Default

230VAC   PE
N L

1 2 3 4

A

B

WARNING
FAULT
COMMON

START/OK

PLS-201.L
PLS Systems
Universal ECG
for UV-lamps

START/OK
FAULT
WARNING

C   HEATER B

1 2 3 4

D   HEATER A

UV LAMP

RS-485

Reactor

UV sensor
Temperature sensor

Reactor
status

To external
PLC
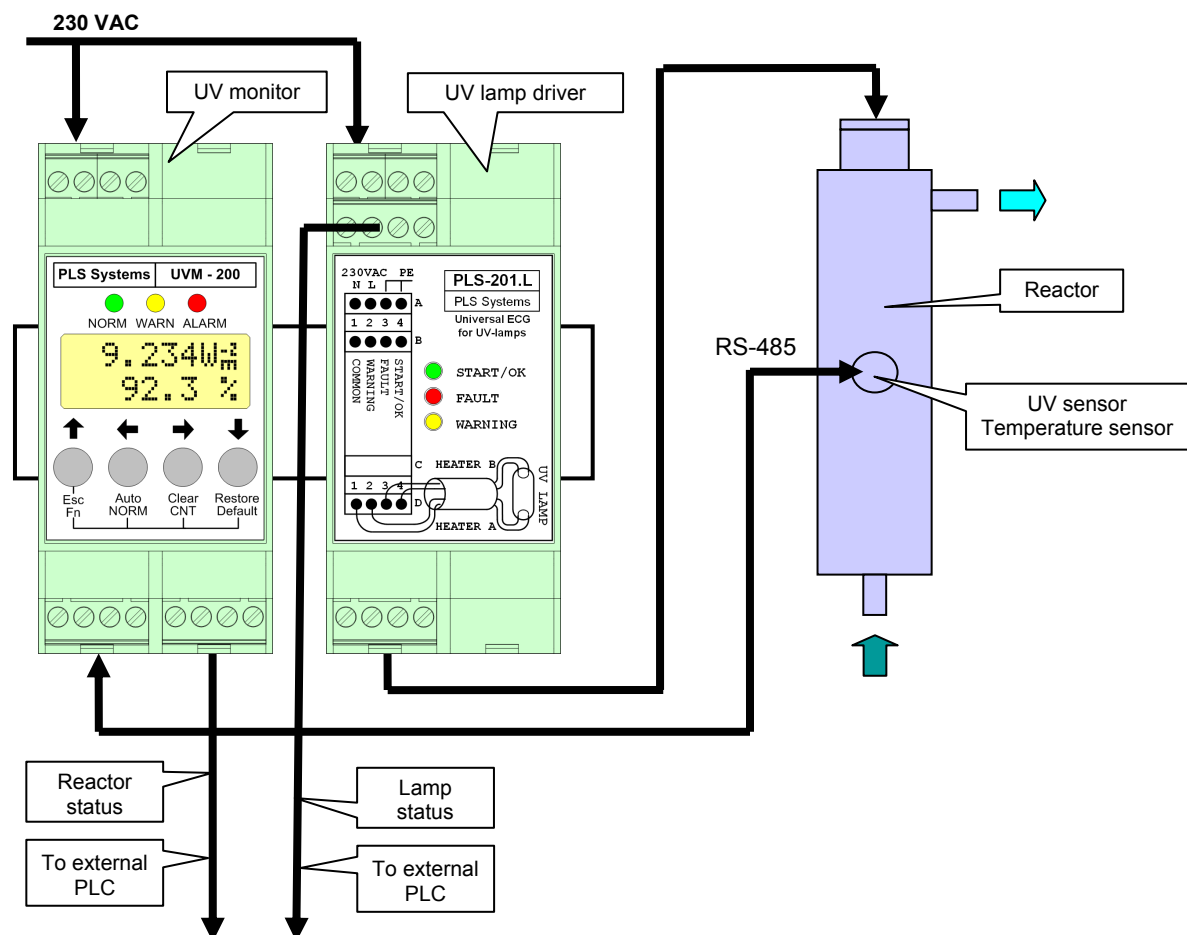
Lamp
status

To external
PLC

Fig. 4. Monitoring of UV level with UVM-200 and UVS-100T – lamp drive and lamp status monitoring with PLS-201.L

Digital UV and
temperature sensor
UVS-100T

M12 5-pin connector with RS-485 cable

Possible application fields:

1) Water purification installations - monitoring of UV level in purification reactors

2) Industry – monitoring of min-max UV level generated of various type of lamps in different industrial applications (UV curing, UV drying, UV lacquering, printing)

3) UV hazardous areas (air and room purification in hospitals, UV curing, UV drying, welding, printing, UV surface sterilization, etc.) – monitoring of maximal allowed level and dose calculation

4) Air purification systems – monitoring of minimal assumed UV level and dose

5) Environmental measurements – UV measurements in UVA, UVB and UVC band

6) All applications requiring long distances between sensor and monitor – up to 1000 m

7) Multi-sensor applications – up to 32 sensors can be connected to one RS-485 bus section

Monitor UVM-200

Fig. 5. Complete UV monitoring system:
UVS-100T digital sensor and UVM-200 monitor