honle group

uv-technik International • www.uv-technik.co.uk • Phone +44 (0)1582 805410

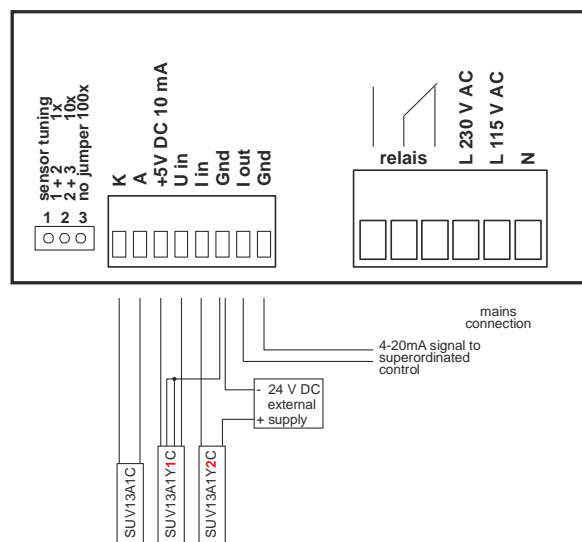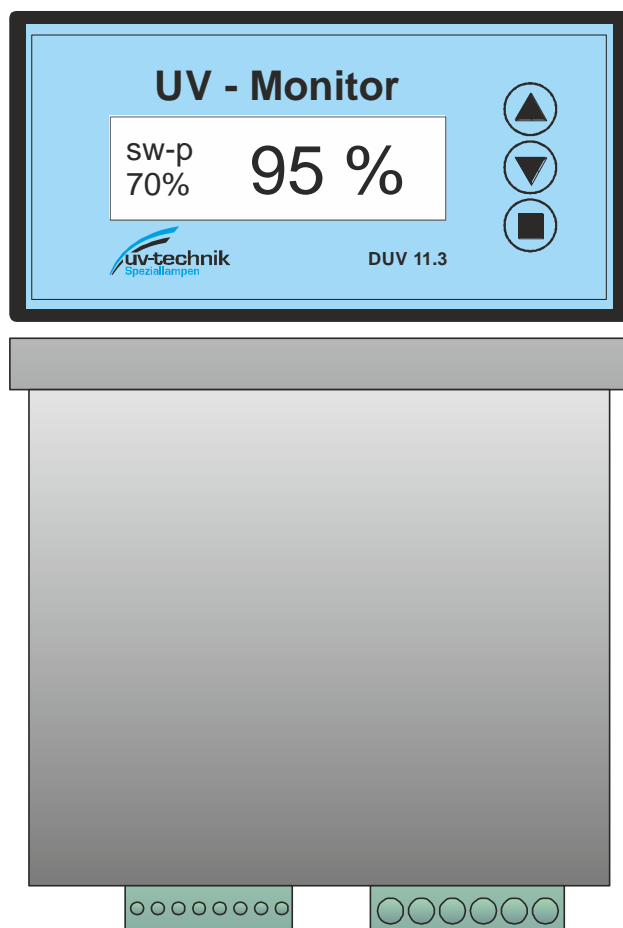**uv-technik international ltd.**

UV Monitor DUV 11.3

The monitor DUV 11.3 is intended in conjunction with a relative or absolute measuring UV sensor for the monitoring of UV radiation sources. It is suitable for installation in the front door of switchboxes. The device was designed to allow optional custom changes to the hardware and software.

Technical data

supply voltage	115/230 V AC (± 10 %), 50/60 Hz
equipment	**input for sensors with relative measurement** (diode) **and absolute measurement** (opt. Y1/2) **operating hours counter** (only full operating hours, short insertions to be ignored) **relay** (changeover), potential free, 230V / 6A (L- and C-free), programmed for switching with exceeding the lifetime hours and under-usage of the threshold of the UV intensity
inputs	**diode:** input sensitivity via jumper adjustable (internal amplification 1x, 10x, 100x) **voltage:** for sensors with option Y1 (0-4.5V), (supply via 5VDC from the monitor) **current:** for sensors with option Y2 (4-20 mA), (external 24VDC supply necessary) Input selectable via the menu (only one sensor connectable!)
outputs	**output 4-20 mA:** for measured value transfer to higher-level control **output 5VDC:** supply voltage for voltage sensors with option Y1 Note: sensor with option Y2 (current output) needs external 24VDC supply
dimension	95 x 48 (B x H), mounting depth 100 mm
contact	screw terminal blocks
ambient temperature	0 - 50°C
protection level	IP 20
weight	200 g

Installation dimensions and connections:

Existing available software versions:

software	applicable for sensors:
V 1.2	diode, option Y1 (voltage)
V 1.3	diode
V 1.4	diode, option Y1, option Y2
V 1.5	diode, option Y2 (current)
V 1.9 current version (successor of V1.4)	diode, option Y1 (voltage), option Y2 (current) extended range of functions

The current version is available from stock at short notice.

Installation and commissioning

The monitor is designed for panel mounting. To be mounted via the appropriate opening (dimensions see drawing) with screw clips. With optionally available transparent cover the front can be protected from splashing. All connections are located on the rear panel.

The supply voltage can be either 230 V DC or 115 V DC. This is determined by the choice of the corresponding input. The connection panel also includes a connection for the sensor and the switching output (4-20 mA output and inputs for current and voltage sensors).

Please take care of the pin assignment for a correct cabling.
Reversal of terminals can lead to destruction of the device.

Pre-setting for version V1.9 (standard)
no password
input diode, jumper with amplification factor x10
UV-alarm at 50%
lifetime-alarm after 8000 hours
Iout 20 mA = 100%

Operation and settings

All settings and the operation are to be set via the three front buttons. The unit turns automatically on when a supply-voltage is connected. Initially the monitor type and the software version will be shown on the LCD display. After a few seconds, the monitor enters the measuring mode and shows the threshold for the UV-alarm and the current irradiation value in percent. For a better readability, the display has a background lighting and the illustration of the irradiance is enlarged. Left of the UV value, the switching threshold (sw-p 50%) is displayed in small font. In measurement mode, the device can be disabled by pressing the Enter key and turned on.

Press the ▲ button displays the selected lamp life and the elapsed operating time of the lamp for 5 seconds. By briefly pressing the Enter key, the menu is called. Use the ▼ ▲ keys to select menu items and set values. After input of the values and settings press the Enter key for confirmation and saving. An overview of the entire menu is shown in the section menu structure.

Use with relatively measuring sensors (diode):
Since the input diode has already been set at the factory, no change for the first setup is necessary in this regard. If the factory setting has been changed, through the sub menu **sensor uv / input uv** the input **diode** must be selected. After the monitored lamp reaches its operating temperature the menu item **cal value** can be calibrated to 100%. If the desired value is not achieved, the sensitivity has to be increased via the jumper and/or the sensor must be placed closer to the lamp. The sensor should be aligned with the center directly on the lamp. A distance of 2-5 cm has proved successful in practice. The setting of the sensor sensitivity is possible by the jumpers in 3 steps (gain x1/10/100). If the selected sensitivity is too high, while performing the calibration process, in the display shows **Idiode > Imax**. In this case the jumper must be plugged to a lower amplification or the distance of the sensor to the lamp needs to be increased. Is the sensitivity set too low, during the calibration process, the display shows **Idiode < Imin**. In this case the jumper must be plugged to a higher amplification or the distance of the sensor to the lamp must be reduced. If the 100% setting is not possible even in the highest sensitivity (x100), the distance of the sensor to the lamp must be reduced mandatory. Alternatively, sensors with a higher output signal (e.g. SWV13) may be used. Sometimes dirt (on lamp, submersible tube, sensor) and a bad transmission of the medium located between the lamp and sensor prevent a sufficiently high signal from the sensor.

The factory-set values according to customer or as specified by the lamp manufacturer can then be changed through the menu items **uv alarm** and **lifetime alarm**. The alarm threshold (sw-p = switching point) can range from 0 (disabled) to 90% in 5% steps. The lamp life can be in the range 0 (disabled) to 30,000 hours respectively. In the menu item **Iout adjust** the 4-20 mA – output can be calibrated. The entered value corresponds to 20 mA. Usually, the value of 100% = 20 mA should not be changed. If needed this value can be changed to any value in the range of 10-500%. Via the menu item **lifetime** the operating hours counter, after cleaning and installing a new UV lamp, should be reset. The internal operating hours counter counts only full hours. Short-term power-on are ignored.
If required a password to protect settings can be programmed.

Use with absolute measuring sensors (option Y1 output voltage / current output Y2):
As first step on the menu **sensor uv / input uv** the desired input must be set. Via **cal value** as next step the calibration of the sensor must be entered. This value is usually lasered on the sensor or to be find written on the separate sheet for the sensor. For sensors with current output the calibration value corresponds to the end value of the sensor at 20 mA. For sensors with voltage output after the calibration value in W/m² the corresponding voltage value in V must be entered. In addition, the 100% value to which the percentage display of the irradiation value refers must be specified.
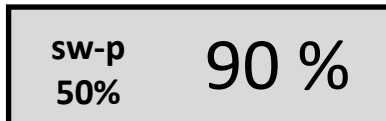Example: 20 mA = 100 W / m² or 1..5 V = 50 W / m²
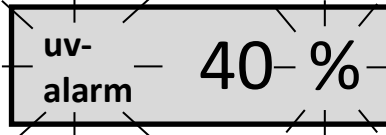The rest of the setting is analogue to programming in relative measuring sensors (diode).

Display-indication during operation

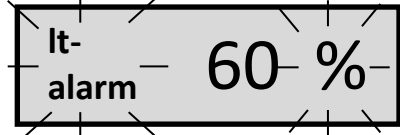**Measured values when selecting the diode input (relative measurement):**

normal operation

| sw-p 50% | 90 % |

irradiance too low
uv-alarm and % flashes
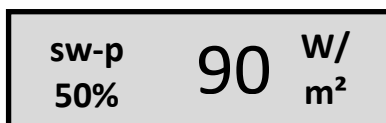
| uv-alarm | 40 % |

maximum of operating hours reached
lt-alarm and % flashes

| lt-alarm | 60 % |

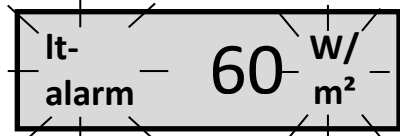**Measured values when selecting the current/voltage input (absolute measurement):**

normal operation

| sw-p 50% | 90 W/m² |

irradiance to low
uv-alarm and W/m² flashes

| uv-alarm | 40 W/m² |
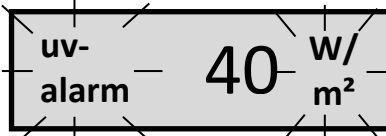
maximum of operating hours reached
lt-alarm and W/m² flashes

| lt-alarm | 60 W/m² |

Upon reaching one of the two alarm thresholds, the relay switches. At the same time the % or W/m² starts flashing on the display and instead of the threshold display flashes **uv-alarm** or **lt-alarm**. If both alarm limits are exceeded, the **uv-alarm** as the alarm with the highest priority is flashing. If the UV-alarm is deactivated by entering a threshold value of 0, in the display **sw-p off** flashes to indicate that the lamp is running without supervision.

Indication of operational hours:

| lt: | 2300 h |
| lt-alarm: | 8000 h |
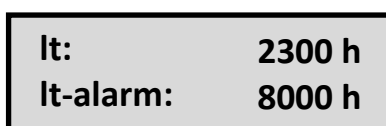
elapsed operating time of the lamps

alarm value for changing bulbs (lamp life)

Pressing the ▲ button while indication of measured value in the display the elapsed operating time (lt), and the original lamp life (lt-alarm) is shown for 5 seconds.

Menüstruktur

measured value	level 1 *password request*	level 2 *main menu*	level 3 *submenu*	level 4 *submenu*	level 5 *submenu*	description of the menu item
Enter long ▶						power down of the monitor
arrow up ▲						shows elapsed lifetime of the lamps and the alarm value for lifetime for 5 seconds (see display indication)
Enter short ▶						call the menu
	password ▶					enter password *(if present)*
		▼▲ **sensor uv** ▶	▼▲ **unit** ▶	%, W/m², mW/m², µW/m² ◀		choose the diode input for UV measurement
			▼▲ **input uv** ▶	diode, Uin, Iin return ◀		choose the input for UV measurement
			▼▲ **cal value** ▶	**cal diode 100%** ok / return ◀		apply the currently measured diode current as 100% value (input diode)
				cal value U$_{in}$ xxxx W/m² ◀	cal value U$_{in}$ 1-5V ▶ 100% equivalent ▶ auto/manually ◀	setting of the calibration value for the voltage input and setting the 100% value
				cal value I$_{in}$ xxxx W/m² ◀		setting of the calibration value for the current input
			▼▲ **return** to sensor uv ◀			back to main menu
		▼▲ **lifetime**	**lifetime** reset / return ◀	**lifetime** ok / return ◀		reset operation hours meter to 0
		▼▲ **uv alarm** ▶	**uv alarm** 5-90% / 0=off ◀			setting of the UV alarm threshold (relative to 100% and maximum value of current / voltage)
		▼▲ **lifetime alarm** ▶	**lifetime alarm** 1-30000h / 0=off ◀			setting of the alarm value for operating hours (lamp lifetime)
		▼▲ **relais alarm** ▶	**off / on @ alarm** ◀			setting the operating mode of the relay
		▼▲ **Iout adjust** ▶	**Iout adjust** 10..500% ◀			setting of the output signal the 4-20 mA output
		▼▲ **default settings** ▶	**<set> return** ▶	**default settings?** <ok> return ◀		reset to factory settings
		▼▲ **change password** ▶	**change password** 1-30000 /0=off ▶	**repeat password** 1-30000 /0=off ▶	**password changed/wrong return** ◀	changing the password for menu access
		▼▲ **factory menu** ▶				access to manufacturer menu *(no access for clients)*
	◀	▼▲ **return** to measured value ◀				back to measured value display

Moving in the menu:
◀▶ enter button short for enter the menu or branch in the displayed menu item (the direction of the arrow shows the direction to jump to Enter)
▼▲ navigation in the menu on the chosen level
◀▶ enter button long to confirm settings / values (the direction of the arrow shows the direction to jump to Enter)

Number input:
▼▲ setting values at the cursor position
▶ Short press the Enter key moves the cursor one position to the left (rotating)
◀▶ long key press> 3 sec. will confirm the set value and exit the submenu (the direction of the arrow shows the direction of jump to menu after Enter)

Please also note the other products from the DUV11 device family. For example, PCB assemblies without housing for installation in control boxes and devices for connecting digital sensors.
Our sales staff will gladly advise you to find the right device for your application.