

## Spezial equipment for PURION water disinfection plant

### Operating Power Detection - OPD

.. UV sensors and their respective monitors are necessary for surveillance of uv plants and more as a standard in modern plants.

The OPD was developed for surveillance of uv-plants.

This system observe the uvc-irradiance of the used uv-lamps.

The sensors we offer are printed with

Carbide Photo-diodes (SiC).

The used diodes have a very good sensitivity for the main wavelength between 250 nm and 260 nm.

This is also the main wavelength from low-pressure lamps.

The surveillance was designed in kind of a »traffic light«.

The device delivers, in combination with the uv sensor, percentage information of the uv-radiation power.

The uv monitor is installed after the front side of the control box.

### Technical data of sensor

|                       |  |
|-----------------------|--|
| applications          | drinking water, waste water                              |
| material probe body   | stainless  |
| flanges               | external G 1/4" thread                                   |
| diode/sensitivity     | SiC/230 nm - 320 nm                                      |
| angle of opening      | ca. 30°  |
| operating temperature | 0° C to + 60° C/100° C for brief periods                 |
| pressure resistance   | 16 bar overpressure to<br>1 bar sub-atmospheric pressure |
| electrical connection | flanged plug,<br>5-pole cable                            |

### Technical data of surveillance

|                   |   |
|-------------------|---|
| operating voltage | 230 V AC (110 V AC,<br>24 V DC or 12 V DC possible) |
| input             | signal from SiC-UV sensor                           |

### Display

|                        |  |
|------------------------|--|
| continuous (green LED) | at > 70% of starting power   |
| pre alarm (yellow LED) | at < 70% of starting power   |
| main alarm (red LED)   | at < 50% of starting power   |
| red LED flashing       | no sensor, sensor defect, cable<br>break, measuring amplifier defect |
| green LED flashing     | measuring amplifier defect   |

### Monitoring of the life time/Operating Time Counter - OTC

The operating time counter is necessary for surveillance of uv plants, and more as a standard in modern uv plants.

The OTC was developed for surveillance of uv plants.

The system works as normal as an operating-hour-counter.

After impression of the operating voltage (230 V AC) the counter starts running. On each switch-on the so called »startup« procedure is carried out.

In doing so the LEDs red, yellow and green lights one after another each with 1 second. The procedure allows the monitoring of the functioning of the LEDs. Moreover systematic interruption of the procedure allows resetting of the counter.

The surveillance was designed in kind of a »traffic light«. In the memory of the unit are two time-barriers ( $t_{yellow}$  and  $t_{red}$ ) to save. Is the effective time  $t < t_{yellow}$ , the green LED becomes illuminated. Exceed the effective time these time-barrier, the yellow LED becomes illuminated. If the effective time exceeds the second time-barrier, the red LED becomes illuminated.

The uv monitor is installed after the front side of the control box.

### Technical data of surveillance for life time

|                        |  |
|------------------------|--|
| operating voltage      | 230 V AC (110 V AC, 24 V DC,<br>or 12 V DC possible)     |
| special function       | counter can be resetted after<br>replacement of the lamp |
| continuous (green LED) | < 95% to guaranteed life time                            |
| pre alarm (yellow LED) | > 95% to guaranteed life time                            |
| main alarm (red LED)   | guaranteed life time is over                             |