



## PID SENSORS FOR VOC

Photoionization detectors (PID) measure the concentration of volatile organic compounds (VOC) which occur as by-products in many industrial processes and are a source of environmental pollution.

PID exposes gas sample to deep ultraviolet light (UV) which breaks down VOC into positive and negative ions. After detecting the charge of the ionized gas the concentration is reported in ppm or ppb. PID sensors can be installed in both portable and stationary madur devices.

## TECHNICAL DATA

Currently, our devices use Alphasense PID-A1 Photoionization detector. madur proposes two stock ranges of VOC detection - 100 ppm and 1000 ppm, both with resolution of 1 ppm. However, as the PID-A1 has a linear dynamic range from 100-ppb to 6,000-ppm (Isobutylene), it can be calibrated for a different range to suit our customer's needs. On a special demand we are ready to provide sensor (Alphasense PID-AH) designed to measure very low VOC concentration from 5ppb to 50ppm.

## LIFESPAN

PID's operating life can reach 5 years. However it doesn't apply to consumables which are a part of the sensor - **electrode stack and lamp are user-replaceable**.

Electrode stack can last the life time of the PID, but when used in heavily contaminated environment the replacement may be required after much shorter period, even one month. Lifespan of the 10.6eV lamp installed in the sensor is estimated for 5,000 lit hours. madur gives 12 months warranty from the date of sale for PID. The warranty does not cover lamps and electrode stacks.

## MAINTENANCE

The interval of PID's maintenance may vary. It depends on the environment where the sensor is measuring and VOC concentrations that are measured. Clean environment and low concentrations will slow down the process of aging and precision of measurement will be preserved for longer.

If PID is losing sensitivity - it requires recalibration. Please notice, that gas mixer or several (3+4) different concentrations of reference gas are required to recalibrate PID.

To conduct other maintenance actions (replacement of electrode stack and/or lamp), a special removal tool and service calibration cable is needed (both offered by madur). Afterwards, a recalibration of PID must be performed.

madur offers free-of-charge technical training concerning maintenance and calibration of PID.

PID sensor can be delivered pre-calibrated: users can either purchase a complete, calibrated PID replacement sensor (with its PCB) for easy swap in the analyser, or can send malfunctioned sensor along with its PCB for service and re-calibration (no need to send the whole device). When purchasing new PID from madur please notice, that the price of pre-calibrated sensor (along with its PCB) differs from non-calibrated one (detector alone). To check all prices of PID sensors (installed as an option in a newly executed device) go to the Ordering Guide tab for a specific device. To see what is the cost of the sensor alone or pre-calibrated sensor with PCB (for replacement of the used one) go to the Shop.

Please do not hesitate to contact our service team ([service@madur.com](mailto:service@madur.com)) for further assistance, inquiries, training schedules, others.