

PAH Oil-In-Water Sensor

- Detects crude oil on the correct wavelength
- Excellent detection limit + fast response time
- Corrosion-free titanium housing
- Analogue, RS-232, RS-485 data output
- Anti-fouling coating, optionally Anti-fouling device
- Monitoring, ODAS buoy, AUV, ROV applications



Fluorometric methods are widely used in environmental monitoring, analytical chemistry and limnological and oceanographic biology. Oil spills for example at petrol stations or after accidents lead to widespread contamination of soil, surface water and groundwater with BTXE and PAH. Online fluorometers allow continuous measurements and non-destructive sampling in combination with good specificity and low detection limits. In order to meet the above mentioned requirements, the PAH sensor is designed as compact and light underwater sensor.

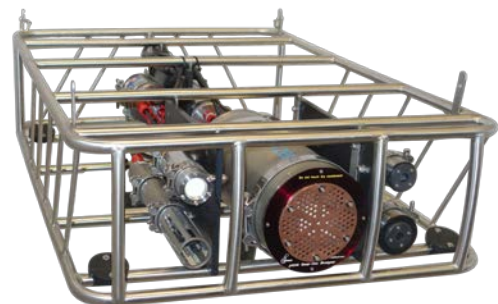
Application examples:



OceanPack™ flow-through-system



Nano-coating Anti-fouling



ROV Sensor-Pack incl. CH4/CO2/PAH/CTD



Specification	
Applications, Parameters	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> humic acids, amino acids, BTXE and polycyclic aromatic hydrocarbons PAH <input checked="" type="checkbox"/> supervision and online control of fresh water in waterworks and boreholes <input checked="" type="checkbox"/> monitoring of waste water in industrial and municipal sewage works <input checked="" type="checkbox"/> crude oil detection, leakage control at offshore oil pipelines with ROV <input checked="" type="checkbox"/> fuel detection in natural waters and sewage plants
Detector	Optical Xenon flash lamp at 254 nm / UV detector at 360 + 254 nm
Mounting	All directions, 10 cm free water in front of the optic required
Operational depth	500m shallow water, 2000m, 4000m • 6000m deep sea extended rating
Temperature	0 .. +50 °C • Other ranges on request
Measuring range	0...50 / 0...500 ppb (see note)
Resolution	0.1 ppb (see note)
Response time	500 msec
Warm-up time	< 10s for switching off/on under water
Calibration	recommended every 12 months
Lifetime	10 ⁹ flashes = 3 years of continuous operation (254 nm 50 % intensity drop)
Power supply	wide range 12 .. 26 VDC • 240 mA @12V • max. 3.0 W
Analogue Output	0 .. 5 V or 4 .. 20mA linear • Configurable for high- or low-ranges
Digital Output	RS-232C (approx. 50m) • Optionally RS-485 (approx. 3km)
Housing	Ø68 x 280mm (500m) • Ø75 x 320mm (4000m, 6000m) • Titanium housing
Antifouling	Innovative nano-coating on the optical lens prevents oil-films and fouling
Weight	1.8 kg / 1.0 kg approx. in air / water (500m) • 4.4 kg in water (4000m, 6000m)
Options	Datalogger with 2 GB Flash Memory • Li-Ion PowerPacks 45Ah, 117Ah, ...

Note: the instrument will be calibrated in TFCS "The Fluorescence Concentration Standard" units equal to "ppb" for any substance. Depending a real substance, a provided multiplier must be used, e.g. "141" for gasoline. In this case the unit is moved from "ppb" to "ppm" or "µg/l". The physical sensitivity of the instrument is of course unchanged.

<u>Examples for crude oil:</u>	<u>conc. µg/l</u>	<u>factor</u>	
Crude Oil Brent (Northsea)	10000	72	not completely dissolved
Crude Oil Karachaganak (Kazakhstan)	10000	112	not completely dissolved
Crude Oil Forties (Brit. North Sea)	10000	76	not completely dissolved
Crude Oil Debno (Poland)	10000	100	not completely dissolved
Crude Oil Ob Bay (Russia)	10000	92	not completely dissolved
Crude Oil Albacora Leste (Brasilia)	10000	57	not completely dissolved

