

# PAH500 PAH Oil-in-Water Continuous Online Monitoring Sensor

**Applications**  
• Maritime Water



## Proven. Trusted. Reliable. The solution for exhaust gas cleaning systems.

### Reliability

With hundreds of successful installations on inlet and outlet scrubber applications, you can have confidence in accurate readings, maximum uptime, premium service and support from a global water quality company. The PAH500 is the online oil-in-water sensor that delivers high sensitivity with low cost of ownership.

Hach's 85 years of water analysis leadership, experience, and innovation ensure that you're getting the best instrument and peace of mind to go along with it.

### Certifications

We understand how important your business and your equipment are to you, that's why we take pride in receiving certifications from the following organisations:

Maritime Type Approvals: DNV-GL, ABS, ClassNK, Japanese Government, and Korean Register\*\*

Marine Environmental Protection Committee: MEPC.259(68) from DNV-GL

Certification demonstrates Hach's commitment to continual improvement and sustainable business performance.



\*\* Certifications may be pending final reviews & certifications with certain Maritime Societies.

### Minimal Maintenance

With no tubes, pumps, or valves that can foul, maintenance is limited to occasional cleaning of the quartz tube and service once every other year to stay in compliance with IMO regulations (annual for USCG regulations). After all, why spend time on maintenance when you don't have to?

### Built for Maritime

The PAH500 was purpose built for harsh maritime applications. It can detect and measure polycyclic aromatic hydrocarbons (PAHs) from 0 - 900 ppb ( $\mu\text{g/L}$ ). Titanium housing and quartz measurement tube help to eliminate corrosion in exhaust gas cleaning system (EGCS) applications. The sensor is nitrogen purged from the factory, ensuring reliable operation in humid environments. The light source, filtering, and calibration for Phenanthrene in exhaust gas scrubbers mean that this sensor is designed specifically for your application.

Hach offers a variety of products to support your EGCS application and comply with IMO regulations including:

- Ultraturb sc (Turbidity)
- pHD (pH)
- Series 3700 (Conductivity)
- SC1000 (Controller)

## Technical Data\*

### PAH500 Sensor

<b>Measurement Method</b>	Ultraviolet (LED) 255 nm excitation; 370 nm detection
<b>Measurement Principle</b>	UV Fluorescence
<b>Parameter</b>	PAH (polycyclic aromatic hydrocarbon)
<b>Range</b>	0 - 900 µg/L PAH / PHE (phenanthrene equivalents)
<b>Accuracy</b>	± 5 µg/L for readings ≤ 100 µg/L ± 5% for readings > 100 µg/L
<b>Turbidity compensation</b>	Calculated, accurate for turbidity ≤ 150 NTU
<b>Data Logger</b>	10 s - 15 min
<b>Measuring Interval</b>	10 s
<b>Operating Temperature Range</b>	5 - 55 °C
<b>Power Requirements (Voltage)</b>	12 VDC supplied by digital gateway
<b>Power Consumption</b>	1 W
<b>Housing Material</b>	Titanium
<b>Dimensions</b>	Sensor Body (Ø x L): 76.2 x 145.1 mm (3.0 x 5.71 in)
<b>Weight</b>	1 kg
<b>Cable</b>	Analog cable, 4-conductors + shield, drain wire, 24 AWG, 90 °C, 600 V <sub>RMS</sub> , IEC 60332-1-2; UL94 VW-1, 1 - 3 m (standard: 1 m)
<b>Certifications</b>	EU CE Mark Maritime Type Approvals**: DNV-GL, ABS, Class NK, Japanese Government, Korean Register Marine Environment Protection Committee - MEPC.259(68)

### A/D Gateway

<b>Interface</b>	Analog: 0 - 5 VDC (input from sensor), 12 VDC (output to sensor) Digital: Modbus, RS485 (output)
<b>Dimensions</b>	Gateway (Ø x L): 34 x 175 mm (1.4 x 7 in)
<b>Weight</b>	145 g
<b>Cable</b>	Cable between the sensor and digital gateway: 1 m (3.3 ft); flame rating IEC 60332-1-2; UL94 VW-1
<b>Connector</b>	M12 Male/Female
<b>Flame retardancy</b>	UL94 V-0 (GW housing, plastics) IEC 60332-1-2, UL VW-1 (digital cables)
<b>Enclosure Rating</b>	IP67
<b>Power Requirements (Voltage)</b>	12 VDC supplied by SC1000 Controller, 1.8 W

\*Subject to change without notice.

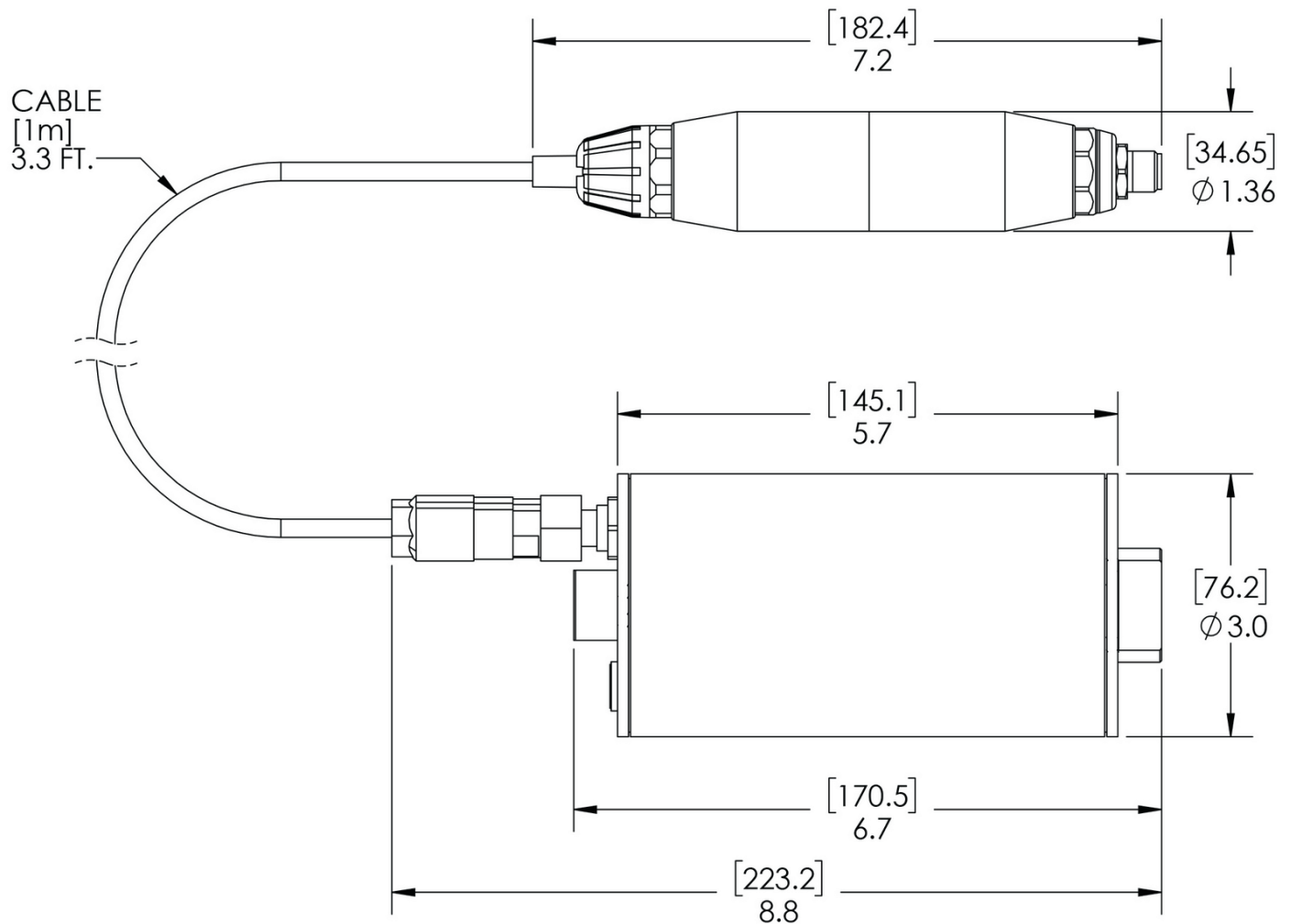
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## Principle of Operation

The measuring principle is based on the fluorescent properties of PAHs. After excitation caused by a UV light source, PAHs emit light with longer wavelengths after a short time delay. The intensity of this light is measured and is proportional to the concentration of the PAHs. This measuring principle is considerably more sensitive than absorption and scattered light measurement. It is possible to detect even the slightest trace of PAH contamination in water. PAHs are integral parts of most mineral oil products and are a very specific indicator of oil contamination in water bodies and process water.

## Dimensions

[in millimeters / inches]



## Order Information

### PAH Sensors

<b>LXV541.99.1001H</b>	PAH500 Digital PAH Sensor, 1.0 m Cable, Bracket
<b>LXV541.99.2001H</b>	PAH500 Digital PAH Sensor, 7.7 m Cable, Bracket
<b>LXV541.99.3001H</b>	PAH500 Digital PAH Sensor, 15 m Cable, Bracket
<b>LXV541.99.4001H</b>	PAH500 Digital PAH Sensor, 30 m Cable, Bracket

### Accessories

<b>6122400</b>	Digital Extension Cable, 1 m (3.3 ft.)
<b>5796000</b>	Digital Extension Cable, 7.7 m (25 ft.)
<b>5796100</b>	Digital Extension Cable, 15 m (50 ft.)
<b>5796200</b>	Digital Extension Cable, 31 m (100 ft.)
<b>6166300</b>	Drain Valve
<b>6845000</b>	¼" NPT Plug
<b>LXZ541.99.0001H</b>	Mounting Brackets

### SC1000 Controller

#### Probe Modules:

<b>LXV400.99.00122</b>	SC1000 Probe Module, 4 Sensors, 4x 4-20 mA Out, 110-240 V AC
<b>LXV400.99.00131</b>	SC1000 Probe Module, 6 Sensors, 4x 4-20 mA Out, 110-240 V AC

#### Display Module:

<b>LXV402.99.00202</b>	SC1000 Display Module w/o GSM
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### Reagents and Consumables

<b>LZC541</b>	PAH500 Sensor Calibration Kit
<b>2563899</b>	Phenanthrene Standard, 25 ppb
<b>2563901</b>	Phenanthrene Standard, 50 ppb
<b>2088000</b>	Alconox® Detergent
<b>2088153</b>	Liqui-Nox® Detergent
<b>1227642</b>	Isopropyl Alcohol
<b>244932</b>	Sulfuric Acid, 5.25 N
<b>9774000</b>	Cleaning Swab, pk/50
<b>2749320</b>	Disposable Pipettes, pk/20

### Hach Service Protects Your Investment

With Hach Service, you have a global partner who understands your maritime needs and cares about delivering timely, high-quality service you can trust. Our Service Team brings unique expertise to help you maximize instrument uptime, ensure data integrity, maintain operational stability, and reduce compliance risk.

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