

# AHHOI IR

## IR – Water In-Line Sensor, Patent No. 2009439

The AHHOI – Infrared Water-in-Oil Sensor is a technical development of Martechnic® in the area of the in-line oil quality monitoring designed for accurate real-time assessment. Based on the IR principle, the sensor measures continuously the content of water in lubricants of different origin and can be employed for various application systems (diesel engines, gearboxes and hydraulic systems). In comparison to other existing in-line water monitoring systems, the infrared technology of the AHHOI Sensor provides a crucial advantage, namely it enables determination of water in all three states: saturated, emulsified and free.



### Technical Features:

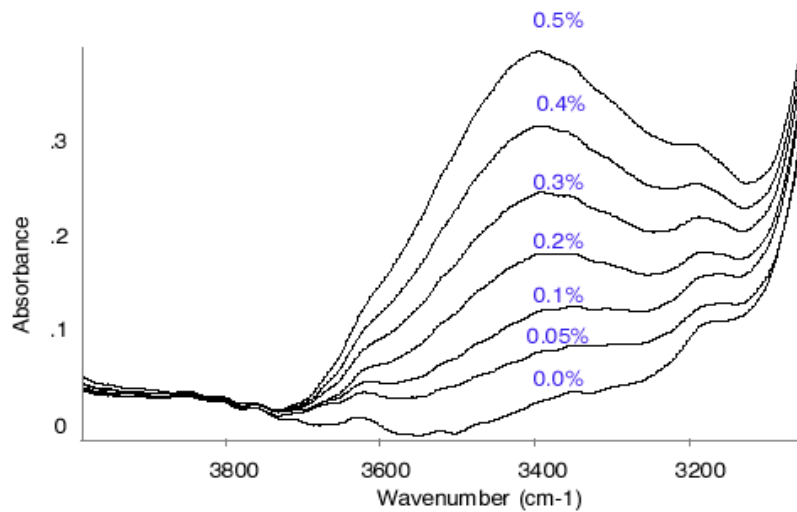
- Measuring range: 0 - 10000 ppm / 0 – 1.0 vol. % water
- Operating voltage: 100 - 240 V AC / 50 - 60 Hz, 24 VDC is available on request
- Oil system pressure: 1-10 bar
- Operating pressure: 0.8 – 1.5 bar
- Measuring temperature: 0 - 59 °C

### Benefits:

- Continuous measurement of water-in-oil content
- Detection of water in all three states
- Low maintenance expenditure
- Easy to install, retrofit or reinstall
- Plug & Play

The AHHOI Sensor is installed according to the bypass method: thereby it can be integrated on-site and connected to the lubricating oil system of the engine with a pressure ranging from 1 to 10 bars. As the sensor should be operated at a constant pressure of 1 bar, the integrated valve of the device helps to constantly maintain the pressure at the same level. The AHHOI requires a pressure free outlet (atmospheric drain) and incorporates a flush through system for cleaning, while the in-built oil filter protects the measuring cell of the sensor system.

Before starting to measure the degree of water concentration, the sensor needs to get pre-calibrated for a particular oil grade in use. The content of water then can be continuously measured in molecular form up to 10000 ppm / 1.0 vol. %.



*IR spectrum of a mineral oil contaminated with water (0 – 0.5 vol. %)*

**Source:** EC project "Sensoil"

The system is housed in a A3 sized IP 54 steel box and requires 100 - 240 V and has both serial and analogue outlets (0 - 20 / 4 - 20 mA) available.

The corresponding software for data recording in the framework of trend analysis is provided by Martechnic®.