

## Product Description

The MS1200 Oil in Water and Pollution Monitor is typically used to protect drinking water treatment plants from pollution events at the raw water intake. These events can impact the quality of the produced water and result in expensive **filter replacement** and **clean-up operations**.

In addition the system can be used for a wide range of surface water, ground water and industrial water applications.

The MS1200 utilises a contactless measurement technique, sensing headspace gases to provide a measurement system requiring **no reagents or gases** and with very low maintenance requirements.

It is accurate to low ppb concentrations and its continuous measurement mode provides immediate information on pollution levels allowing immediate response to any event.

It is available with a standard display or touch screen interface.

## Applications

- Monitoring of water abstraction points
- Detection of VOC contamination in **wastewater**
- Monitoring of **drain and storm water** systems
- Detection of **fuel pollution** in surface water
- A monitoring solution for **industrial effluent**
- Detection of VOC breakthrough in **carbon beds**
- Measurement of VOCs in **process water**
- **Reverse Osmosis membrane** protection
- Protection of **desalination plants**

*“without the MS1200  
it is far more likely  
that we’ll be prosecuted  
and make the national news”*

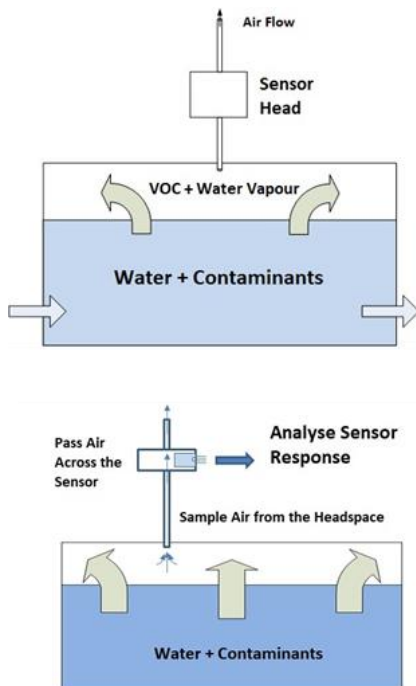


## Key Benefits

- No sensor contact with water:  
**low maintenance, no sensor cleaning**
- **No reagents:** low running costs
- Electronic Nose: **not affected by turbidity**
- **High sensitivity:** ideal for potable water
- Can be calibrated for specific substances:  
used to monitor known spills
- **Detects VOC chemical spills**
- Interfaces to wide variety of communication interfaces

## Principle of Operation

The principle of operation is the measurement of **headspace gases** from a sample tank containing the water to be measured. According to Henry's Law the concentration of gases in the headspace is proportional to the concentration of the substance in the water. Therefore, measurement of the gases provides a technique to measure the concentration of the substance in the sample water.

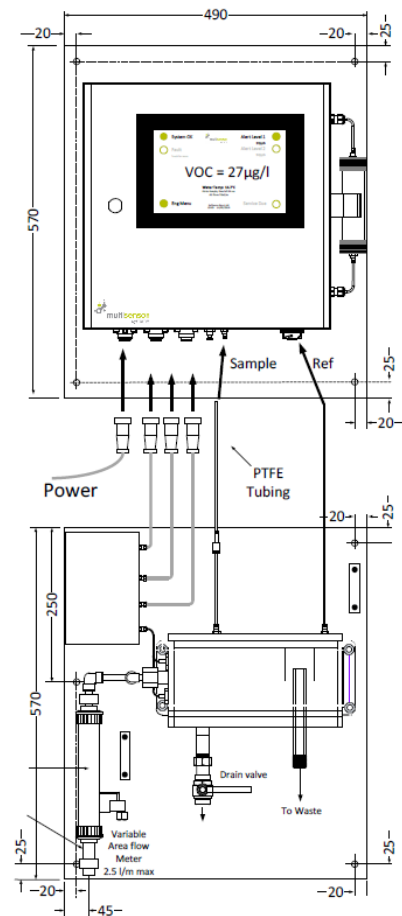


The MS1200 works by passing water through a sample tank as shown below. The **volatile components** in the water will pass into the headspace above the water where they will be trapped.

The headspace gases are sampled continuously and passed through the sensors which respond to the Volatile Organic Compounds (VOCs) in the headspace. This response

is analysed by the instrument and a concentration value is generated, based upon the relationship between the concentration present in the headspace and that in the water.

Thanks to this system, it is possible to determine when a spill occurs and take appropriate actions to protect the process, the filters and the assets and **keep operations running smoothly**.



## Validation

Validation of systems in the field is achieved using the Multisensor **Validation Kit** which presents a standard concentration to the instrument.

## Installation

Installation is a very straightforward process: the instrument requires only connection to a power source, to a water source and to waste. It is supplied mounted on two panels and to be bolted to a wall or onto a frame.

## Typical River Water Application

The photo shows an application where the MS1200 is monitoring a river water intake to detect **hydrocarbon contamination** from an accidental spill.

Story: In early 2013 there was an oil spill into the river from a local petrochemical plant.

The Problem: The water company that abstracts water from the river was hit with high levels of hydrocarbons and this led to a halt in the production and to high costs due to the replacement of filters and pipes and for cleaning operations.

Installation Facts: The instrument is installed in an outbuilding at around 70 m from the river from where the water is taken. Water is analysed for hydrocarbons and VOCs every 15 minutes and, if there's an increased level, an alarm is triggered and action is taken.

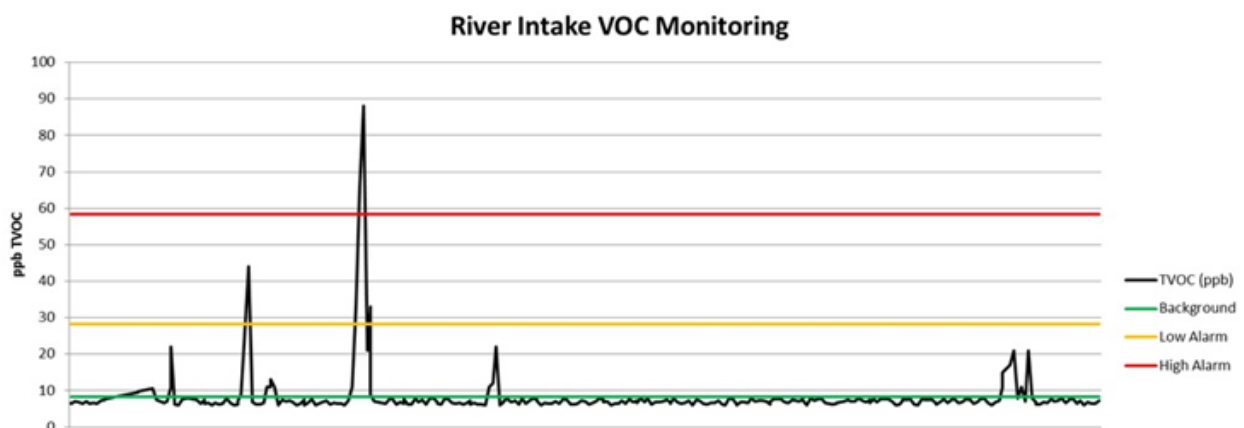
Since the installation the system has protected the water plant on two occasions.



Standard Version of the Analyser

## Low and High Level Alerts

Two alarm levels can be set up in order to give a low level and a high level alarm. In many rivers and bodies of water we can always expect a level of background VOCs contamination. Relays can be triggered to divert water flow and protects the WTP. A background level of VOCs can always be expected, however peaks can be clearly seen.



## Key Performance Parameters

Parameter	Operational Requirements		Notes
	Minimum	Maximum	
Supply Voltage	90 V AC	240 V AC	50 Hz or 60 Hz
Power Consumption: Standard Version Touch Screen Version		15 W 45 W	Typical 10 W during operation Typical 20 W during operation
Water Supply	2 l/min		Acrylic tank, 1 l max for Stainless Steel Tank
Water Pressure		4.0 bar	
Working Temp: Ambient	0 °C	40 °C	Higher temperature available
Working Temp: Water	1 °C	40 °C	Higher temperature available
Sampling Period	Continuous	1 hour	Other sampling periods are available through discussion with Multisensor or an authorised distributor
Detection range	1 ppb	3000 ppb	Measured against Toluene standard. For calibration using other compounds contact Multisensor Systems
Repeatability	-2%	+2%	200 ppb sample measured using standard 1.5 l solution (Water plus Toluene dissolved in DMSO) in glass 2.5 l Winchester type bottle using magnetic stirrer at 25 °C
Accuracy	-10%	+10%	
Display range (Default)	0 ppb	1000 ppb	Configurable on commissioning
Analogue Output	4 mA	20 mA	Scalable to range required, max load 900 R
Analogue Output Isolation	400 V		Continuous. Opto-isolated.
Relay Voltage		50 V	3x, Alarm 1, Alarm 2 and Fault Relays with NO and NC contacts
Relay Current		5 A	
Flow Switch	Contacts closed if flow below set point		Option available on request
Instrument Case	IP65, Coated Mild Steel		
Sample Tank Material	Stainless Steel or Acrylic		Other materials and coatings available
Weight	25 kg		
Dimensions	1170 x 490 x 300 mm		Mounted on 2 separate PVC backboards

## Validation Period

6 Months - using Validation Kit available from Multisensor Systems or Authorised Distributor

## Consumables

Every 6 Months: Air Filter Contents (Active Carbon), Dust Filter Element

Every 12 Months: Sample Tank Gasket

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