MODERNWATER | Multisensor2000

# On-line Trihalomethanes Monitor

The Multisensor2000 is a total Trihalomethanes (THMs) monitor system designed for potable water applications. It provides on-line, real time monitoring and alarm generation without the need for additional chemical reagents. There is no contact between the sensor and the water and virtually no moving parts, eliminating the need for frequent maintenance.

Trihalomethanes are formed as a by-product when chlorine is used to treat drinking water and they are often referred to as disinfection by-products. They result from the reaction of chlorine and/or bromine with residual organic matter present in the water being treated. THMs are potentially carcinogenic and many governments set limits on the amount permissible in drinking water.

The Multisensor2000 detects chloroform, bromoform, bromodichloromethane, and dibromochloromethane, reporting the result as total THMs in ppb ($\mu g l^{-1}$)

The instrument samples air from the head space in the sample tank and this non-invasive method of operation provides for reliable operation and low maintenance.

The Multisensor2000 includes the measurement instrument which is housed in a robust steel enclosure, powered from either 90 - 240V AV or 24V DC sources. Also included is a stainless steel sample tank and associated pipework and control valves. The whole system is mounted on two 12mm thick PVC boards. All that is required is the water supply, drain and power.

- No reagents
- No sensor-water contact
- Low maintenance
- Low ppb ($\mu g l^{-1}$) detection limits
- Output in ppb ($\mu g l^{-1}$)
- Fully quantitative concentration monitoring
- Real time, online


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| SPECIFICATIONS | |
|---|---|
| Conforms to | UL 61010-1 / EN 61010-1:2010<br>EN61326-1:2006 |
| Dimensions | Height 1460mm x width 500mm<br>x depth 280mm |
| Dynamic Range | 1 ppb – 1000 ppb ($\mu gl^{-1}$) in water |
| Result Output | ppb ($\mu gl^{-1}$) Total THMs |
| Absolute Accuracy | For measurement of 80 ppb Total THMs in water: ±10% |
| Repeatability | Repeated measurement of 80 ppb Total THMs in water: ±2% |
| Analysis Time | 20 minutes minimum cycle time |
| Operating Temperature | 0 - 40°C ambient air (0-30°C ambient water) |
| Calibration Period | Six months using a calibration kit available from Modern Water |
| Consumables | *Every 6 months:* Active carbon air filter contents / Dust filter<br>*Every 24 months:* Air pump |
| Communications | USB, Analog 2-40 mA, Profibus, Relays (GSM modem optional) |
| Data Storage | SD card |
| Water Connections | *Inlet:* 1/2" BSP, 1.0 - 0.5 l/min<br>*Outlet:* 1/2" BSP, 1.0 - 0.5 l/min<br>*Waste:* 15mm, connected to tank through drain valve which prevents overfilling of tank |

## Applications

Protection of the drinking water distribution network

Water treatment process monitoring

Regulatory compliance guidance

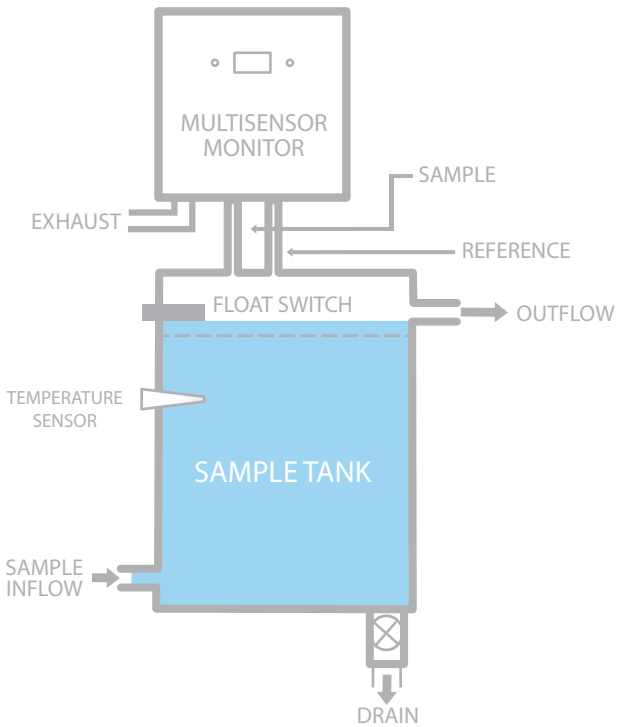
Monitoring of swimming pools

## Process explained

The Multisensor monitors work on the principles of headspace gas equilibrium (Henry's Gas Law). Water flows though the sample tank. Equilibrium is reached in the sample tank and the gas in the headspace is sampled by an "e-nose".

The "e-nose" is an array of four proprietary sensors. Each sensor has a specific non-conductive polymer coating that selectively reacts to compounds dependent upon molecular weight, polarity and molecular diameter.

Results of THMs in the water are calculated compensating for different ambient environmental conditions.

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