

ON-LINE METAL MONITOR

Measuring trace metals in water streams, whether its drinking water, ground water, river water, factory effluent, soil washings or WWTP discharge is a vital part of modern environmental monitoring. Voltammetry offers an internationally accepted alternative to laboratory analysis or automatic samplers. Modern Water's range of OVA products are cost effective, accurate, simple to use and easy to integrate into existing systems.

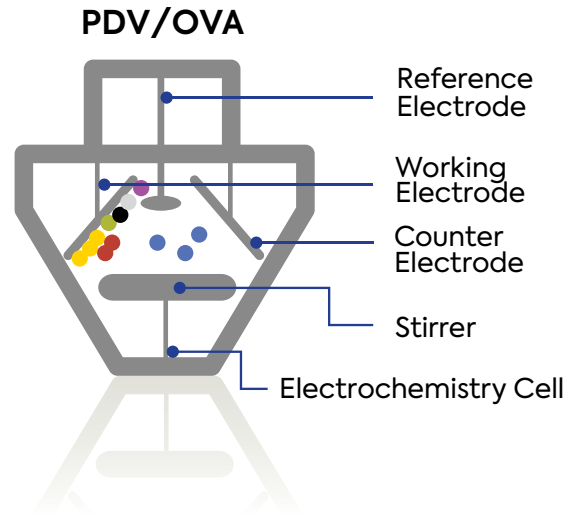
- » Can be configured to monitor 23 different metals
- » Very low detection levels (down to 0.1 µg/L*)
- » High levels of accuracy and repeatability – Excellent Correlation with Laboratory Methods (AAS, ICP-MS)
- » 24-hour monitoring at high frequency can identify and isolate events that
- » daily average sampling may miss
- » Short analysis times allow identification of events as they occur – laboratory analysis typically identifies an event only after it occurred
- » Single cell unit can measure up to six metals.
- » Programmable alarm and outputs for out-of-range samples or system faults.
- » Remote access and data communication with many different secure communication options available including wireless
- » Easy connection to process control room allows integration into automated plant control systems (dosing, flow diversion).
- » Pre-treatment options available to eliminate interferences and allow total and dissolved concentrations to be monitored
- » Solid electrodes-no hazardous mercury drop electrodes
- » Automated testing of pump operation and reagent/sample supply
- » Standard addition or multiple point calibration curve options
- » Multiple language interface options - including traditional and simplified Chinese
- » Online technical support (requires internet connection)



PROCESS EXPLAINED

In Voltammetry metals are drawn onto the working electrode when a specific voltage is applied to the water sample under test.

When a stripping voltage is applied, the metals return to the sample solution, generating a small current. Each metal has a specific voltage at which it returns to solution. So the metal is identified by its stripping voltage and the current generated indicates the concentration of metal in the sample.



WHAT IT DETECTS

The OVA7100 can detect a range of metals (for example: As, Cd, Cr, Cu, Hg, Ni, Pb, Se, Tl, Zn, and others) to single figure $\mu\text{g/l}$ levels (typically 0.5–5 $\mu\text{g/l}$).

Colour or turbidity does not affect the method. Samples range from waste water, process water, river water to drinking water. Acid/ UV digest and filtration are treatment options.

OVA SPECIFICATIONS

Working Electrode	Glassy carbon, used with a variety of films, or solid gold
Counter Electrode	Platinum
Reference Electrode	Ag/AgCl in KCl
Cell Material	Acrylic and PTFE
Cell Stirrer	Adjustable speed stirrer
Cell Volume	10 ml nominal
Drain	Pumped to waste
CE Compliant	YES
Voltammetry Range	-2V to +2V
Sensitivity	1nA
Analysis methods available	Anodic stripping, Cathodic stripping
Waveforms available	Linear sweep, square wave and differential pulse
Calibration	Standard comparison and standard addition option
Result Output	Voltammetry curves, element concentration(s), historical data
Variation (% CV)*	5 to 10%
Operating Software	Windows 10 Enterprise (IOT)

*All values are dependent upon the metal(s) being analysed and the nature of the sample

OVA7100 DUAL CELL SPECIFICATIONS

Product configuration	Two analytical cells with LCD screen for each cell
IP rating	IP 65
Power Supply	Dual voltage: 90 to 265V AC or 12V DC
Communications	LAN, modbus, TCP/IP, WIFI, USB
Outputs	RS232 or RS485
Dimensions	715mm wide x 400mm deep x 1400mm tall (instrument and reagent cabinet together)
Weight	Approx. 36 kilograms

OVA7100 DUAL CELL OPTIONS

15" touch screen control panel in box, IP65 rated
4 - 20mA output
Pre-treatment cell for sample digest and sample acidification for total metal content
UV pre-treatment for samples with high organic content
External pump and filter unit, can be used either for removing coarse solids or to bring samples to the instrument from up to 50m away. Ideally suited for river monitoring, but can be used in WWT plants and factories

APPLICATIONS

- » Accidental or deliberate contamination events
- » Drinking water intake and distribution
- » Groundwater monitoring/ natural attenuation
- » Industrial effluent monitoring
- » Mining and metals processing
- » Monitoring of rivers, lakes, reservoirs, seawater
- » Wastewater recycling and WWTP influent monitoring