

► universal SaFIA



SaFIA is a high-performance one parameter on-line system for unattended monitoring of metals and some non-metals in the lowest, medium and high concentration range, addressing concentrations from the low  $\mu\text{g/L}$  (ppb) range up to several  $\text{g/L}$  concentration. The system make use of a simple but efficient SaFIA flow system coupled with a robust flow-through electrochemical cell. One to three independent measuring units can be installed in a single rack enabling the monitoring of up to 3 species in a single instrument.

SaFIA is a compact instrument consisting of an Analytical Unit, Control unit and the reservoirs for the working solutions, all built in a robust 19" rack system. The whole instrument inclusive the solutions can be locked up. The compact Flow System is controlled by the Control Unit

and operates full automatically. The solutions (sample, carrier electrolyte, reagent) switched by selector solenoid PTFE valves are forced through the Flow System by means of a peristaltic pump. On passing the measuring cell the solutions leave for the drain.

The analysed sample is taken from an overflow filled continuously with fresh sample solution.

The flow-through system with peristaltic pumping provides continuous sampling of the analysed sample and supplementary solutions (supporting electrolyte, calibration solution), their accurate dosage and transport during the whole analysis. Memory effects are minimised by flushing the system with the carrier electrolyte after each measurement.

TECHNICAL DATA	
▶ Potentiostat/galvanostat	12 V / 10 mA
▶ Power	230 V / 50 Hz
▶ Consumption	25 - 65 VA
▶ Inputs / Outputs	<ul style="list-style-type: none"> <li>• Digital input (dry contact)</li> <li>• 4 - 20 mA analog out, galvanically isolated</li> <li>• Concentration alarm (dry contact)</li> <li>• RS-232 serial port for communication with PC (Modbus)</li> <li>• RS-232 / RS-422 / RS-485 signal output</li> </ul>
▶ Flow mode	SaFIA system
▶ Cell	EcaCell 353c or EcaCell 104 with three electrodes
▶ Working electrode	Application dependent
▶ Reference electrode	Ag/AgCl, suitable electrolyte: saturated KCl
▶ Auxiliary electrode	Pt wire
▶ Flow system	Full computer control with peristaltic pumping in forward/backward mode
▶ Measuring range	0.1 µg/L to 10 g/L (application dependent)
▶ Resolution	0.01 µg/L
▶ Accuracy	1 - 5 %
▶ Rack	<ul style="list-style-type: none"> <li>• Wall mounted enclosure, 19" system, 3-part</li> <li>• Wall section containing the power supply and signal output.</li> <li>• Hinged part containing the measuring units (channels), reservoirs and sample inlet module.</li> <li>• Designer glazed door with mini comfort handle for lock inserts.</li> <li>• Viewing window: 3 mm safety glass.</li> </ul>
▶ Protection category	IP 55 to EN 60 529/10.91
▶ Reservoirs	<ul style="list-style-type: none"> <li>• Reagent solution: 5 L</li> <li>• Standard: 250 - 1000 mL</li> </ul>
▶ Sample inlet/outlet	<ul style="list-style-type: none"> <li>• Sample loop</li> <li>• Input pressure: &lt; 1 bar</li> <li>• 1/4" outer diameter tubes for sample inlet and outlet</li> </ul>
▶ Waste outlet	Separate output for the waste from the measuring units. Reagent waste separated from the sample loop outlet.
▶ Software	<ul style="list-style-type: none"> <li>• Download data</li> <li>• Upload parameters</li> <li>• For the operation system Windows 7 / XP / 2000</li> </ul>
▶ Response time	2 - 45 min depending on the concentration range

**TECHNICAL DATA**

▶ Automatic calibration	Pre-programmed timing
▶ Automatic electrode regeneration	Pre-programmed timing
▶ Dimensions <ul style="list-style-type: none"> <li>• 1-channel system</li> <li>• 2-channel system</li> <li>• 3-channel system</li> </ul>	(Width x Depth x Height) <ul style="list-style-type: none"> <li>• 600 x 473 x 612 mm</li> <li>• 600 x 473 x 746 mm</li> <li>• 600 x 473 x 878 mm</li> </ul>
▶ Weight <ul style="list-style-type: none"> <li>• 1-channel system</li> <li>• 2-channel system</li> <li>• 3-channel system</li> </ul>	(with full reservoirs) <ul style="list-style-type: none"> <li>• 50 kg, approx.</li> <li>• 55 kg, approx.</li> <li>• 60 kg, approx.</li> </ul>

**Note** The actual specification of the system is tailored to the application