

8810 ONLINE TITRATOR ANALYSER

Applications

- Industrial water
- Power



Delivering reliable results that save you critical time and effort.

The 8810 analyser offers a new way of monitoring Calcium, Hardness, or Free and/or Total Alkalinity. The analyser provides automatic, online monitoring based on REDOX or pH technology analysis. Results provide the information needed to operate your plant with a high level of reliability and efficiency. Also, the 8811 sequencer allows for up to six sample streams.

Save Time on Maintenance

Reactor is automatically cleaned after each cycle and only monthly maintenance is required. Free programmable auto calibration ensures a constant check of the quality of the measurement.

Easy to Use Setup

Intuitive programming that allows for quick setup and automatic calculation of results.

High level of Reliability and Efficiency

Continuously monitor the relevant key chemical parameters to provide you with the chemical information needed to operate your process on a higher level.

Technical Data*

Parameters	Total Hardness	Calcium Hardness	Free and Total Alkalinity
Measurement method	Redox (ORP) Titration	Redox (ORP) Titration	pH Titration
Calibration method	Manual, process or automatically programmable	Manual, process or automatically programmable	Manual, process or automatically programmable
Exchangeable sensors	ORP & reference electrodes	ORP & reference electrodes	pH & reference electrodes
Measuring range	Total Hardness 0 - 10 or 0 - 500 mg/L CaCO ₃	Calcium Hardness 0 - 500 mg/L CaCO ₃	Alkalinity 0 - 500 mg/L CaCO ₃
Accuracy	± 2 %		
Reproducibility	< 3 %		
Ambient temperature	5 - 55 °C		
Current output	2 x 0/4 - 20 mA linear, logarithmic or bilinear programmable		
Level control	Sample, reagents and calibration solution		
Maintenance interval	Monthly maintenance		
Measuring interval	5 - 999 min freely programmable		
Number of sample streams	1, up to 6 with sequencer model 8811		
Options	External dilution, automatic calibration, free-standing cabinet, wall mount		
Power requirements (Voltage)	110 - 240 V AC		
Power requirements (Hz)	50 Hz		
Pressure range	0.5 - 6 bar		
Pressurised air	4 - 7 bar filtered and dried air		
Process connection (air)	4/6 mm diameter tube connector		
Process connection (rinse water)	6/8 mm		
Process connection (sample flow)	12/14 mm		
Pumps	Peristaltic reagent pump for sample conditioning (additional peristaltic or piston pumps to be ordered separately)		
Relays	2 high or low limits on the concentrations		
Requirement sample pressure	0.5 - 6 bar		
Rinse water pressure	1 - 6 bar		
Flow rate	40 - 300 L/h		
Sample temperature	5 - 50 °C		
Sample volume	200 - 1000 mL per cycle		
Sampling mode	Fixed or loop		
Sampling quality	Maximum particles allowed in sample are 30 g/L with a maximum diameter of 2 mm		
Temperature compensation	Pt100 temperature sensor		
Units	ppm, ppb, mg/L... programmable		
Width	482 mm		
Depth	122 mm		
Height (panel)	753 mm		

*Subject to change without notice.

Principle of Operation

The 8810 is an automatic, chemical online monitor based on volumetric analysis referring to a titrimetry. A reagent solution (titrant), whose chemical composition is tailored to the sample to be analysed, is continuously added to a constant volume of sample solution, until the ensuing chemical reaction is completed. This point is called the endpoint (EP); it indicates that point of the reaction where the two concentrations, i.e., the sample and the titrant, are equivalent to each other.

If: $V_s \cdot C_s = V_r \cdot C_r$

Then: $C_s = V_r \cdot C_r / V_s$

Because: $V_s, C_r = \text{Constant}$

The sample concentration is: $C_s = k \cdot V_r$

V_s = Sample volume

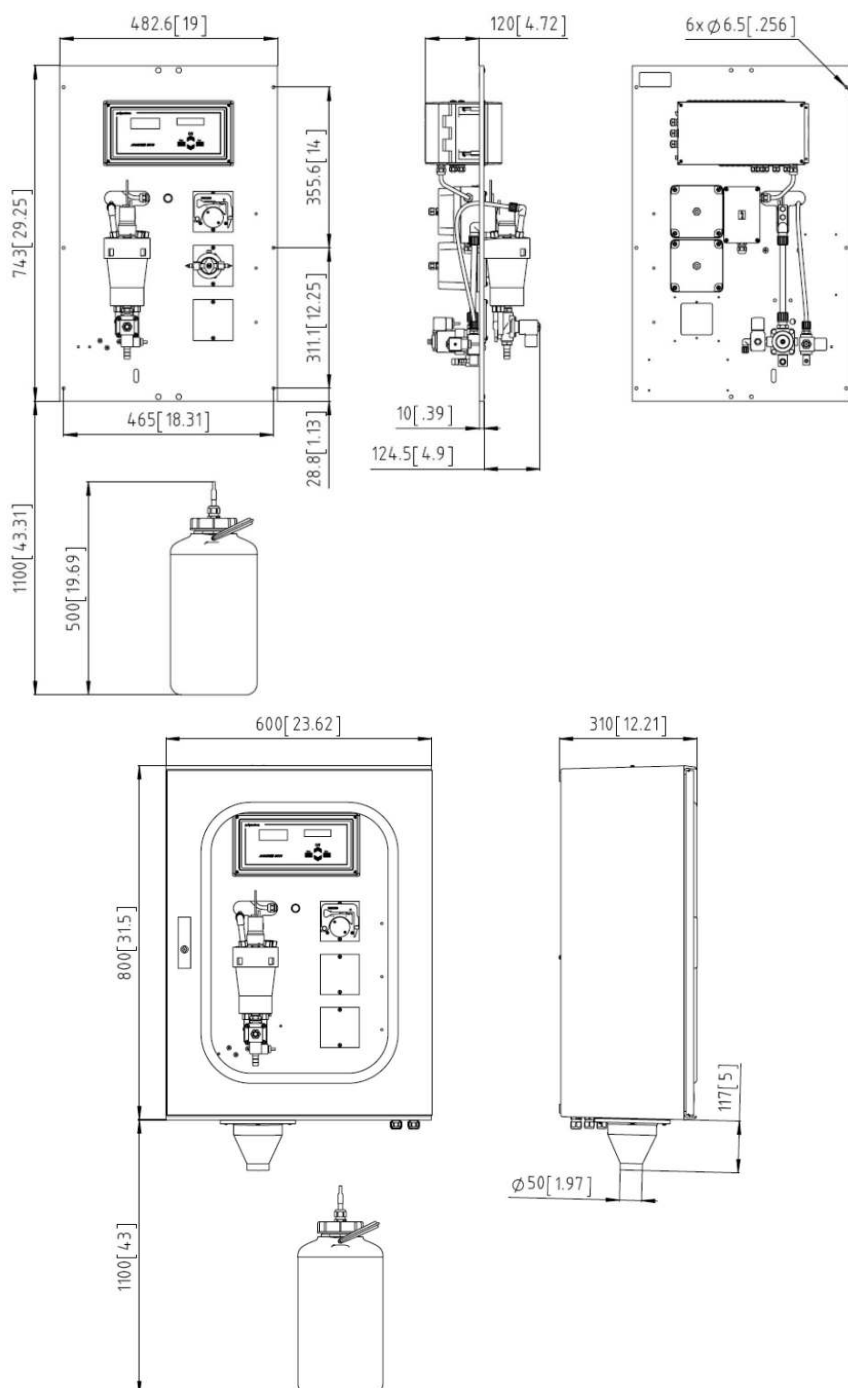
C_s = Sample concentration

V_r = Titrant volume

C_r = Titrant concentration

The constant k is obtained and updated by periodic system calibration and stored in the memory of the microprocessor. Depending on the application, two different endpoint detection techniques are available with the 8810 Analyser.

Dimensions



Order Information

Analysers

	8810 Alkalinity Analyser	8810 Calcium Hardness Analyser	8810 Total Hardness Analyser
	368810,40XXX	368810,53XXX	368810,52XXX
All analysers are available with different power options: XXX=115: 110 V / 50 Hz; XXX=116: 110 V / 60 Hz; XXX=220: 220 V / 50 Hz; XXX=240: 240 V / 50 Hz.			

Required Accessories

368810,71050	Micro Piston Pump	Micro Piston Pump	Micro Piston Pump
	Note : If m ≥ 5p --> 2 pumps required; otherwise one m: total alkalinity, p: free alkalinity		

Optional Accessories/Consumables

368810,91010	Spare parts kit (2 years), 8810 pH analyser with pH electrode, compatible with piston pump		
368810,92012			Spare parts kit (2 years), 8810 ORP analyser with copper electrode, compatible with piston pump
368810,92013		Spare parts kit (2 years), 8810 ORP analyser with calcium electrode, compatible with piston pump	
368810,65000	Manual sample entry system		
368810,00100	Reagent canister holder (up to 4 x 10 L canisters)	Reagent canister holder (up to 4 x 10 L canisters)	Reagent canister holder (up to 4 x 10 L canisters)
368810,60000	Automatic system calibration complete with 10 L canister and level detector	Automatic system calibration complete with 10 L canister and level detector	Automatic system calibration complete with 10 L canister and level detector

Common Enclosure Options

91030=A=0211	Fiberglass enclosure NEMA4X free-standing version (double compartment)
91030=A=0212	Fiberglass enclosure NEMA4X version (single compartment)
91509=A=0152	Tropicalisation of the 8810 Analyser
368810,40000	Fiberglass enclosure (IP54) for wall-mounting

Common Multi Channel Options

08811=A=20X2	2 channels 8811 sequencer for 8810 Analyser
08811=A=20X3	3 channels 8811 sequencer for 8810 Analyser
08811=A=20X4	4 channels 8811 sequencer for 8810 Analyser
08811=A=20X5	5 channels 8811 sequencer for 8810 Analyser
08811=A=20X6	6 channels 8811 sequencer for 8810 Analyser

The 8811 sequencers are available with different power options:

X=1: 110 V / 50 Hz; X=2: 110 V / 60 Hz; X=3: 220 V / 50 Hz; X=4: 240 V / 50 Hz