

EZ4000 Series Online Volumetric Hardness Analysers

Applications

- Wastewater
- Drinking water
- Power
- Surface water



Online automatic titration of Total Hardness or Calcium Hardness in water

Results you can rely on

EZ4000 Series Analysers are single-parameter titrators that achieve excellent precision and accuracy. Depending on the parameter of interest, the measuring range and the water matrix the EZ4000 Series may use either potentiometry i.e. acid-base, redox or precipitation titration, where the endpoint is determined by a change in a specific variable, or photolorimetry, where color change is used to determine the endpoint of the titration. The high precision dispenser for addition, robust peristaltic pumps for sampling and drain, and carefully designed liquid pathways all add up to the highest performance for industrial and environmental analysis needs.

Smart automatic features for validation, priming and cleaning are embedded in the controller software and contribute to analytical performance, maximised uptime and negligible operator intervention. Sample lines and analysis vessel are cleaned with demineralised water to eliminate cross contamination between samples. Electronic and wet-chemical part of the analyser are strictly separated. A transparent door allows for instant visual inspection of the wet part.

Flexibility that meets your needs

EZ Series Hardness Analysers come in an attractive, ergonomic mainframe with a compact footprint. All hardware is controlled by the integrated industrial panel PC. The modular build allows for the analyser to match your application and operational needs.

- The standard measuring range can be narrowed by a different calibration range or extended via internal dilution options.
- Analogue and digital output options
- Multiple stream analysis for up to 8 sample streams

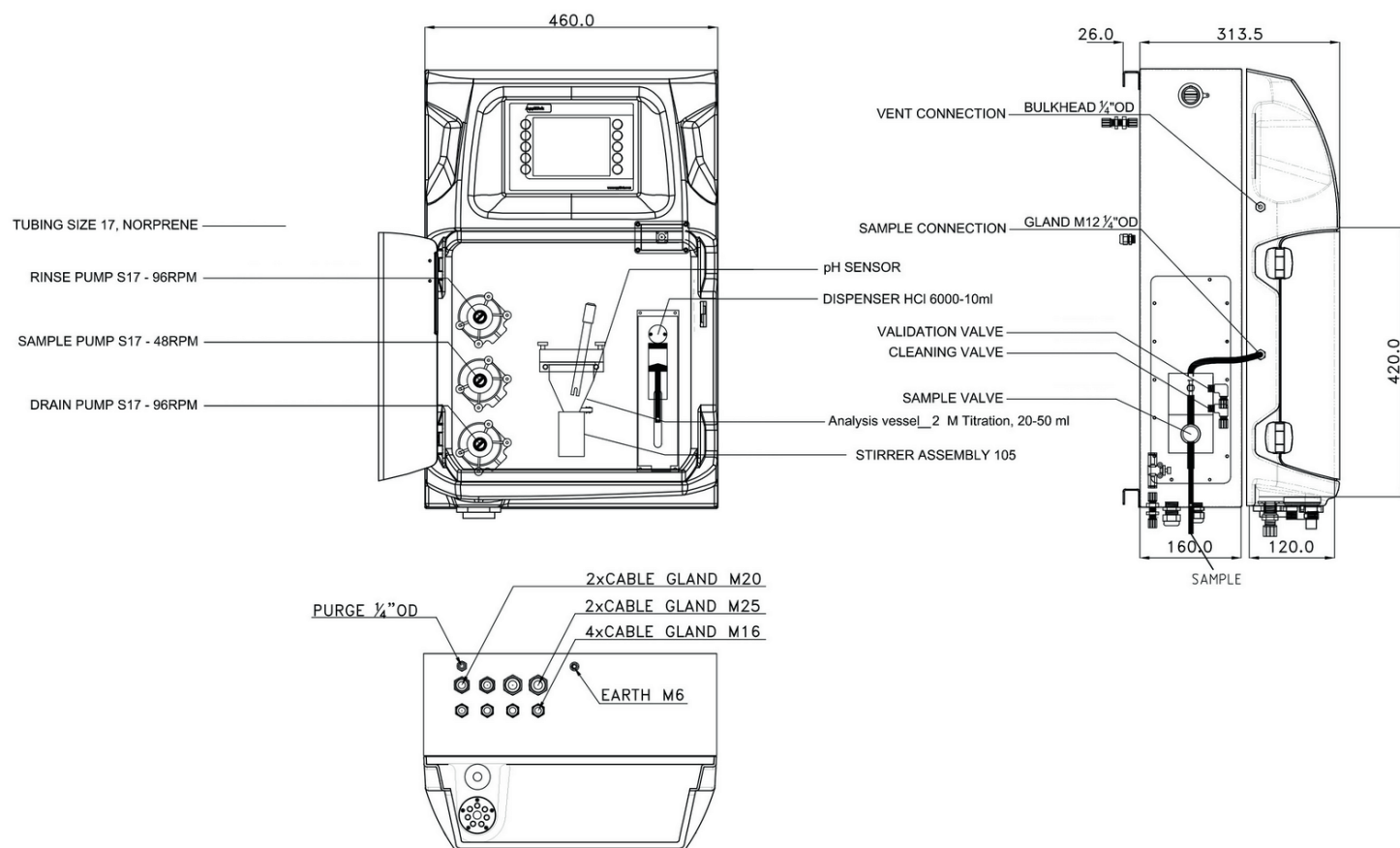
Options for the determination of Hardness include:
Total Hardness, Calcium Hardness

Technical Data*

Model	EZ4041	EZ4043	EZ4044
Parameter	Hardness, total	Hardness, total	Calcium Hardness
Measurement method	Colorimetric titration by EDTA using colour indicator calmagite at 620 nm	Colorimetric titration by EDTA using colour indicator calmagite at 620 nm	Colorimetric titration by EDTA using colour indicator hydroxynaphthol blue at 620 nm.
Measuring range	100 - 1000 mg/L CaCO ₃ Optional: 10 - 100 mg/L CaCO ₃ 25 - 250 mg/L CaCO ₃ 50 - 500 mg/L CaCO ₃ Internal dispenser dilution (max. factor 100)	0.25 - 10 mg/L CaCO ₃ Optional: Internal dispenser dilution (max. factor 100)	100 - 1000 mg/L CaCO ₃ Optional: 10 - 100 mg/L CaCO ₃ 25 - 250 mg/L CaCO ₃ 50 - 500 mg/L CaCO ₃ Internal dispenser dilution (max. factor 100)
Detection limit	≤ 10 mg/L	≤ 0.25 mg/L	≤ 10 mg/L
Precision	Better than 2% full scale range for standard test solutions		
Interferences	Some metal ions interfere by causing fading or indistinct end points or by stoichiometric consumption of EDTA. Suspended or colloidal organic matter also may interfere with the end point. Large amounts of colour and turbidity interfere. Fats, oil, proteins, surfactants and tar.		
Cycle time	10 - 15 minutes		
Automatic cleaning	Yes		
Calibration	N.A.		
Validation	Automatic; frequency freely programmable		
Ambient temperature	10 - 30 °C ± 4 °C deviation at 5 - 95% relative humidity (non-condensing)		
Reagent requirements	Keep between 10 - 30 °C		
Sample pressure	By external overflow vessel		
Flow rate	100 - 300 mL/min		
Sample temperature	10 - 30 °C		
Sample quality	Maximum particle size 100 µm, < 0.1 g/L; Turbidity < 50 NTU		
Power	110 - 240 VAC, 4 A, 50/60 Hz Max. power consumption: 150 VA		
Instrument air	Dry and oil free according to ISA-S7.0.01-1996 quality standard for instrument air		
Demineralised water	For rinsing / dilution		
Drain	Atmospheric pressure, vented, min. Ø 64 mm		
Earth connection	Dry and clean earth pole with low impedance (< 1 Ohm) using an earth cable of > 2.5 mm ²		
Analogue outputs	Active 4 - 20 mA max. 500 Ohm load, standard 1, max. 8 (option)		
Digital outputs	Optional: RS232, Modbus (TCP/IP, RS485)		
Alarm	1x malfunctioning, 4x user-configurable, max. 24 VDC/0.5 A, potential free contacts		
Protection class	Analyser cabinet: IP55 / Panel PC: IP65		
Material	Hinged part: Thermoform ABS, door: plexiglass Wall section: Galvanised steel, powder coated		
Dimensions (H x W x D)	690 mm x 465 mm x 330 mm		
Weight	25 kg		
Certifications	CE compliant / UL certified		

*Subject to change without notice.

Dimensions



Hach Service

With Hach Service, you have a global partner who understands your needs and cares about delivering timely, high-quality service you can trust. Our Service Team brings unique expertise to help you maximise instrument uptime, ensure data integrity, maintain operational stability, and reduce compliance risk.

Order Information - Part Number Configurator

Total Hardness, Calmagite/EDTA, 100-1000 mg/L CaCO ₃	EZ4041.99						
Total Hardness, Calmagite/EDTA with LED dipping probe, 0.25-10 mg/L CaCO ₃	EZ4043.99	X	X	X	X	X	2
Calcium Hardness, Hydroxynaphtol Blue/EDTA, 100-1000 mg/L CaCO ₃	EZ4044.99						
Measurement range settings							
10% of standard range (only EZ4041, EZ4044)	A						
25% of standard range (only EZ4041, EZ4044)	B						
50% of standard range (only EZ4041, EZ4044)	C						
Standard range	0						
Internal dispenser dilution (max. factor 100)	5						
Customised	Z						
Power supply							
Standard 110 - 240 VAC; 50/60 Hz	0						
Customised	Z						
Number of sample streams							
1 stream						1	
2 streams						2	
3 streams						3	
4 streams						4	
5 streams						5	
6 streams						6	
7 streams						7	
8 streams						8	
Outputs							
1x mA						1	
2x mA						2	
3x mA						3	
4x mA						4	
5x mA						5	
6x mA						6	
7x mA						7	
8x mA						8	
RS232						A	
Modbus TCP/IP						B	
Modbus RS485						C	
1x mA + Modbus RS485						E	
2x mA + Modbus RS485						F	
3x mA + Modbus RS485						G	
4x mA + Modbus RS485						H	
1x mA + Modbus TCP/IP						I	
2x mA + Modbus TCP/IP						J	
3x mA + Modbus TCP/IP						K	
4x mA + Modbus TCP/IP						L	
Customised / combined						Z	
Specials							
No adaption, standard version						0	
Customer specific adaptations required, to specify						S	

DOC053.52.35174.Mar20