

EZ1000 Series Online Colorimetric Hardness Analyzer

Applications

- Wastewater
- Drinking water
- Steam & power generation
- Process water
- Surface water



Online colorimetric analysis of Total Hardness and Calcium Hardness in water

Results you can rely on

EZ1000 Hardness Analyzers achieve excellent precision and accuracy. At the heart of the colorimeter there is a compact photometer assembly developed especially for the EZ Series. Consumption of reagents is reduced by low volume analysis, yet high sensitivity is assured by a long optical path length. The limit of detection is in the low $\mu\text{g/L}$ range.

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

Flexibility that meets your needs

EZ Series Hardness Analyzers 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 analyzer 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.
- Analog and digital output options
- Multiple stream analysis for up to 8 sample streams

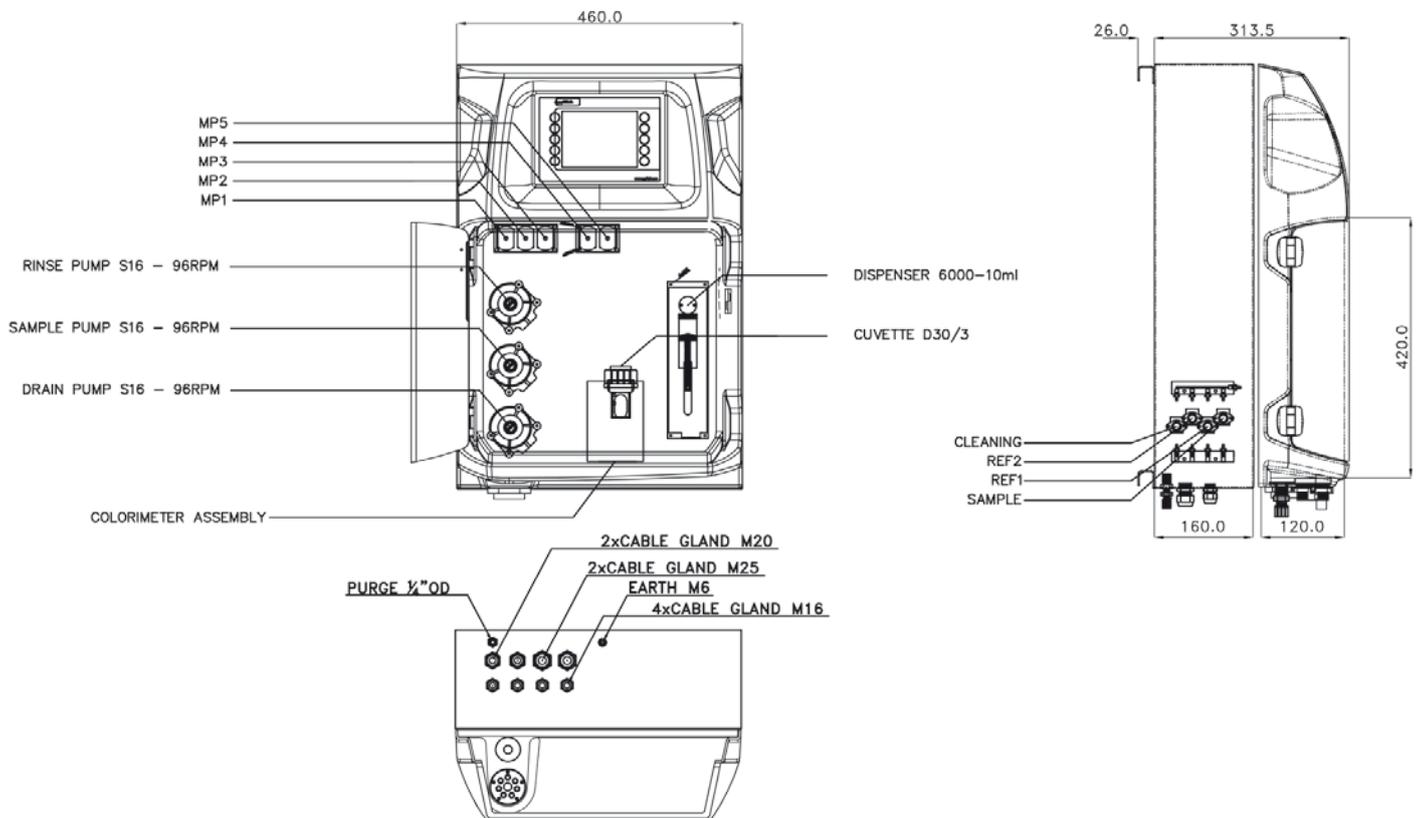
Options for the determination of Hardness include:
Total Hardness; Calcium Hardness; Total Hardness & Calcium;
Total Hardness & Calcium & Magnesium

Technical Data*

Parameter	a) Total Hardness b) Calcium Hardness						
Measurement method	a) Colorimetric measurement at 610 nm using calmagite/EDTA b) Colorimetric measurement at 610 nm using hydroxynaphthol blue/EDTA						
Measuring range	<table border="0"> <tr> <td>Total Hardness, Calcium Hardness</td> <td>Magnesium Hardness</td> </tr> <tr> <td>0.025 - 1 mg/L CaCO₃</td> <td>0.1-1 mg/L CaCO₃</td> </tr> <tr> <td>Optional: 0.0025-0.1 mg/L 0.005-0.25 mg/L 0.005-0.5 mg/L 0.2-4 mg/L (with internal dilution) 0.4-8 mg/L (with internal dilution) 2.5-100 mg/L (with internal dilution)</td> <td>Optional: 0.01-0.1 mg/L 0.02-0.25 mg/L 0.02-0.5 mg/L 0.5-4 mg/L (with internal dilution) 1-8 mg/L (with internal dilution) 10-100 mg/L (with internal dilution)</td> </tr> </table>	Total Hardness, Calcium Hardness	Magnesium Hardness	0.025 - 1 mg/L CaCO ₃	0.1-1 mg/L CaCO ₃	Optional: 0.0025-0.1 mg/L 0.005-0.25 mg/L 0.005-0.5 mg/L 0.2-4 mg/L (with internal dilution) 0.4-8 mg/L (with internal dilution) 2.5-100 mg/L (with internal dilution)	Optional: 0.01-0.1 mg/L 0.02-0.25 mg/L 0.02-0.5 mg/L 0.5-4 mg/L (with internal dilution) 1-8 mg/L (with internal dilution) 10-100 mg/L (with internal dilution)
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Precision	Better than 2% full scale range for standard test solutions						
Detection limit	TH, THCa: ≤ 2.5 µg/L CaCO ₃ , THMg: ≤ 10µg/L CaCO ₃						
Interferences	<p>a) Some metal ions interfere by causing fading or indistinct end points or by stoichiometric consumption of EDTA.</p> <p>b) Dissolved Copper Cu(II) > 2 mg/L, Iron Fe(II) > 20 mg/L, Manganese > 10 mg/L, Zinc > 5 mg/L, Lead > 5 mg/L, Aluminium > 5 mg/L and Tin Sn(IV) interfere. Orthophosphate precipitates Calcium at the pH of the test. Strontium and Barium give a positive interference and alkalinity in excess of 300 mg/L may cause an indistinct end point in hard waters.</p> <p>Large amounts of color and turbidity interfere. Fats, oil, proteins, surfactants and tar.</p>						
Cycle time	10 min (dilution + 5 min.) per parameter						
Automatic cleaning	Yes						
Calibration	Automatic, 2-point; frequency freely programmable						
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						
Demineralized water	For rinsing and/or 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	1 x malfunctioning, 4 x user-configurable, max. 24 VDC/0.5 A, potential free contacts						
Protection class	Analyzer 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



Be confident with Hach Service

Start-Up/Commissioning: Our service technicians visit your site and setup instrumentation, provide basic end-user training on operations and maintenance, and validate settings and performance to get you started.

Service Agreement: Hach provides on-site and in-factory repair, preventive maintenance, and calibration programs for your instruments to ensure reliability and instrument up-time. We have services to fit your specific needs.

Order Information - Part Number Configurator

Total Hardness 0.025 - 1 mg/L CaCO ₃	EZ1016.99						
Calcium Hardness 0.025 - 1 mg/L CaCO ₃	EZ1017.99						
Total Hardness 0.025 - 1 mg/L CaCO ₃ & Calcium H. 0.025 - 1 mg/L CaCO ₃	EZ1304.99	X	X	X	X	X	2
Total Hardness 0.025 - 1 mg/L CaCO ₃ & Calcium H. 0.025 - 1 mg/L CaCO ₃ & Magnesium H. 0.1 - 1 mg/L expressed as CaCO ₃	EZ1306.99						
Measurement range settings / Dilution options							
10% of standard range	A						
25% of standard range	B						
50% of standard range	C						
Standard range	0						
Internal micropump dilution (factor 4)	1						
Internal micropump dilution (factor 8)	2						
Internal dispenser dilution (max. factor 100)	5						
Customized	Z						
Power supply							
Standard 110 - 240 VAC; 50/60 Hz						0	
Customized						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	
Customized / combined						Z	
Specials							
No adaption, standard version							0
Customer specific adaptations required, to specify							S