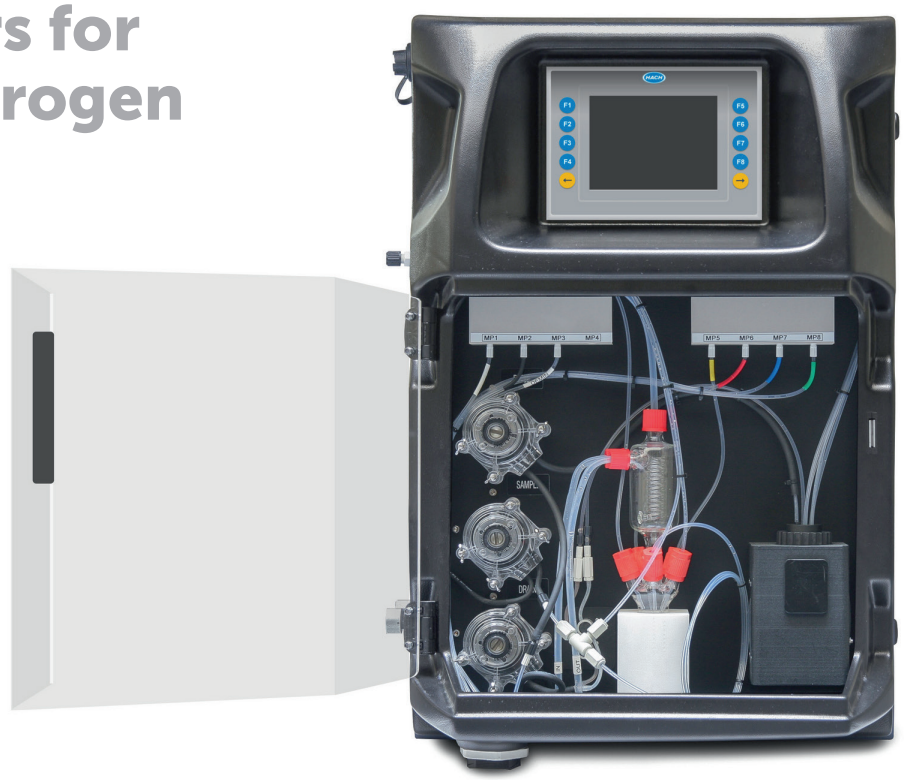
EZ7700 Series Online Colorimetric Analyzers for Total Nitrogen

Applications

- Wastewater
- Surface Water



Online, automatic monitoring of Total Nitrogen (TN) in water

The EZ7700 Series of Online TN Analyzers meet the needs for fast, convenient and reliable monitoring of the regulatory sum parameter Total Nitrogen in wastewater and surface water applications.

Ammonia, nitrate and nitrite are three key nitrogen species that play an important role in decomposition of organic material in water and biological water treatment in particular. While data on individual levels of these provide operators of WWTP's insight in the biochemical processes, other organic and inorganic forms of nitrogen may also be of significance. Total Kjeldahl Nitrogen (TKN) was originally developed as a measure of organic nitrogen but in practice it was often considered as synonymous with Total Nitrogen (TN) due to the lack of other available technologies. Still today, TN is often confused with TKN.

The EZ7700 Series of Online TN Analyzers were developed in the framework of a research project to provide operators and utilities a viable alternative for the complex and time-consuming TKN method. TN as measured by the EZ7700 comprises all components, organic and inorganic, of the nitrogen cycle by the analyzer's proprietary sample digestion technique, now available in an industrial mainframe with a compact footprint:

- Full oxidation of nitrogen species according to APHA method
- Smart automatic features
- Control and communication via industrial panel PC
- Standard 4 - 20 mA signal output with alarm processing
- Communication supporting Ethernet connectivity to Modbus TCP/IP
- Multiple stream analysis

HACH®
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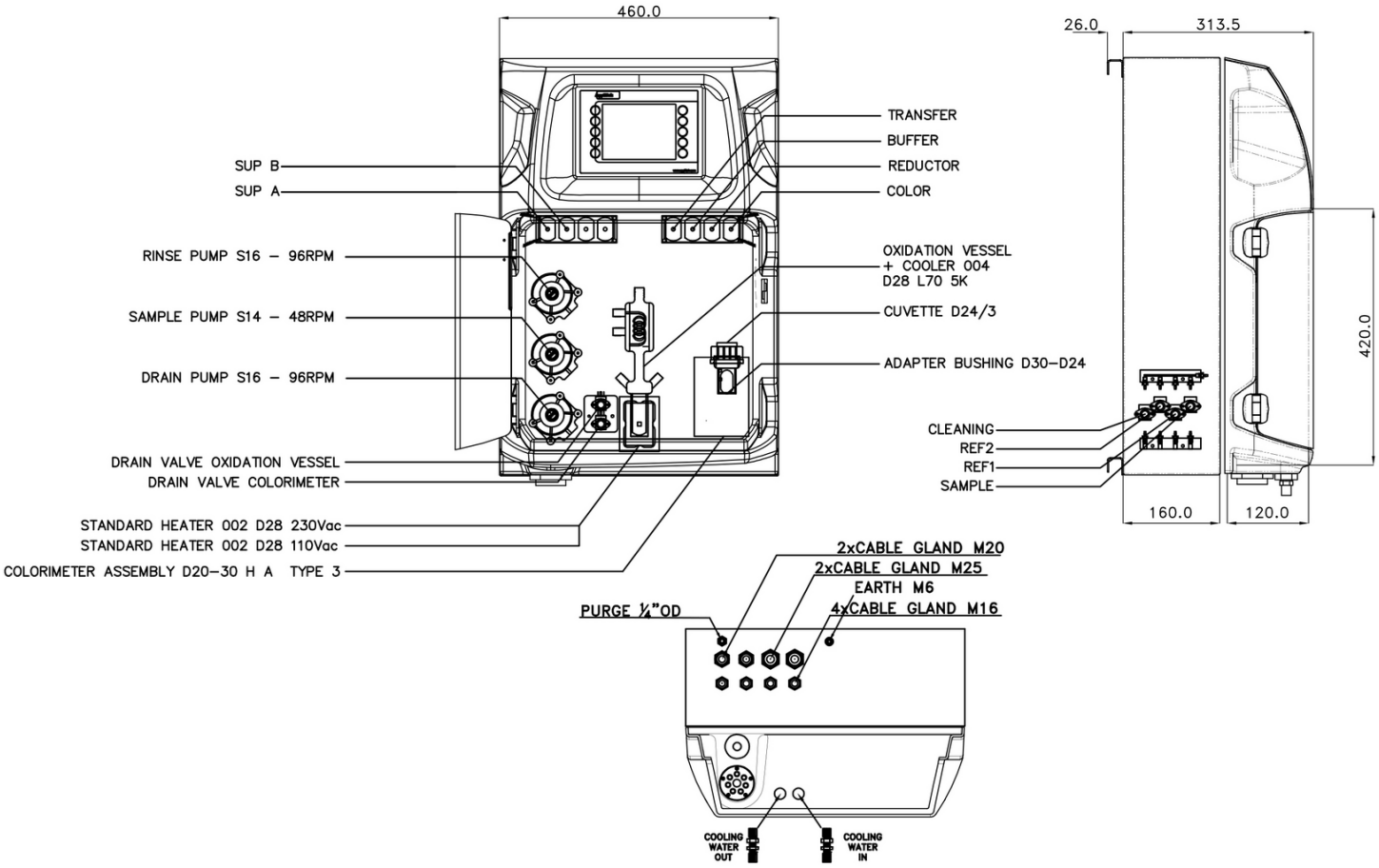
Technical Data*

Model	EZ7700/7701/7702/7703/7704/7705/7706	EZ7750
Parameter	Nitrogen, total	Nitrogen, total Nitrate Nitrite
Range	EZ7700: 0.1 - 2 mg/L TN EZ7701: 0.2 - 5 mg/L TN EZ7702: 0.25 - 10 mg/L TN EZ7703: 0.5 - 20 mg/L TN EZ7704: 2 - 50 mg/L TN EZ7705: 4 - 100 mg/L EZ7706: 10 -200 mg/L	TN: 0.75 - 10 mg/L NO_3-N: 0.125 - 10 mg/L NO_2-N: 0.05 - 5 mg/L
Lower Limit of Detection (LOD)	EZ7700: ≤ 0.1 mg/L TN EZ7701: ≤ 0.2 mg/L TN EZ7702: ≤ 0.25 mg/L TN EZ7703: ≤ 0.5 mg/L TN EZ7704: ≤ 2 mg/L TN EZ7705: ≤ 4 mg/L EZ7706: ≤ 10 mg/L	TN: ≤ 0.75 mg/L NO_3-N: ≤ 0.125 mg/L NO_2-N: ≤ 0.05 mg/L
Precision	Better than 3% full scale range for standard test solutions	
Measurement Method	Colorimetric measurement at 546 nm using hydrazine reduction and NEDD color solution after persulphate digestion in alkaline medium, conform with APHA 4500-N	
Interferences	Antimony (III), Bismuth (III), Chloroplatinate, Gold (III), Iron (III), Lead (II), Mercury (II), Metavanadate, and Silver (I) can precipitate with Nitrate. The presence of Copper (II) may decompose the diazonium salt which results in a low result. Strong oxidizing agents. NCl_3 results in a false red color. Large amounts of color and turbidity interfere. Fats, oil, proteins, surfactants and tar.	
Cycle Time	30 min including digestion of 10 min (standard)	
Automatic cleaning	Yes	
Calibration	Automatic, 2-point; frequency freely programmable	
Validation	Automatic; frequency freely programmable	
Ambient Temperature	10 - 30 °C ± 4 °C deviation (50 - 86 °F ± 7.2 °F deviation) at 5 - 95% relative humidity (non-condensing)	
Reagent Requirements	Keep between 10 - 30 °C (50 - 86 °F)	
Sample Pressure	By external overflow vessel	
Sample Flow Rate	100 - 300 mL/min	
Sample Temperature	10 - 30 °C (50 - 86 °F)	
Sample Quality	Maximum particle size 100 µm, < 0.1 g/L; Turbidity < 50 NTU	
Power	120 VAC, 50/60 Hz Max. power consumption: 440 VA	
Instrument Air	Dry and oil free according to ISA-S7.0.01-1996 quality standard for instrument air	
Demineralized Water	For rinsing	
Drain	Atmospheric pressure, vented, min. Ø 64 mm	
Cooling Water	Flow rate approx. 5 L/h; temperature max. 30 °C; pressure max. 0.5 bar	
Earth Connection	Dry and clean earth pole with low impedance (< 1 Ohm) using an earth cable of > 2.5 mm^2	
Analog Outputs	Active 4 - 20 mA max. 500 Ohm load, standard 1, max. 8 (option)	
Digital Outputs	Optional: 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: Galvanized steel, powder coated	
Dimensions (H x W x D)	690 mm x 465 mm x 330 mm	
Weight	25 kg (55 lbs.)	
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 maximize instrument uptime, ensure data integrity, maintain operational stability, and reduce compliance risk.

Order Information - Part Number Configurator

Total Nitrogen, 0.1-2 mg/L TN	**EZ7700.99**						
Total Nitrogen, 0.2-5 mg/L TN	**EZ7701.99**						
Total Nitrogen, 0.25-10 mg/L TN	**EZ7702.99**						
Total Nitrogen, 0.5-20 mg/L TN	**EZ7703.99**	**X**	**X**	**X**	**X**	**X**	**2**
Total Nitrogen, 2-50 mg/L TN	**EZ7704.99**						
Total Nitrogen, 4-100 mg/L TN	**EZ7705.99**						
Total Nitrogen, 10-200 mg/L TN	**EZ7706.99**						
Total Nitrogen, 0.1-2 mg/L TN / 0.01-0.8 mg/L NO_3 / 0.005-0.6 mg/L NO_2	**EZ7750.99**						
Measurement range settings / Dilution options							
Standard range		0					
Power supply							
230 VAC, 50/60 Hz			A				
120 VAC, 50/60 Hz			B				
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		
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		
**Combinations of up to 8x mA + Modbus are available.*							
No adaption, standard version						0	

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