

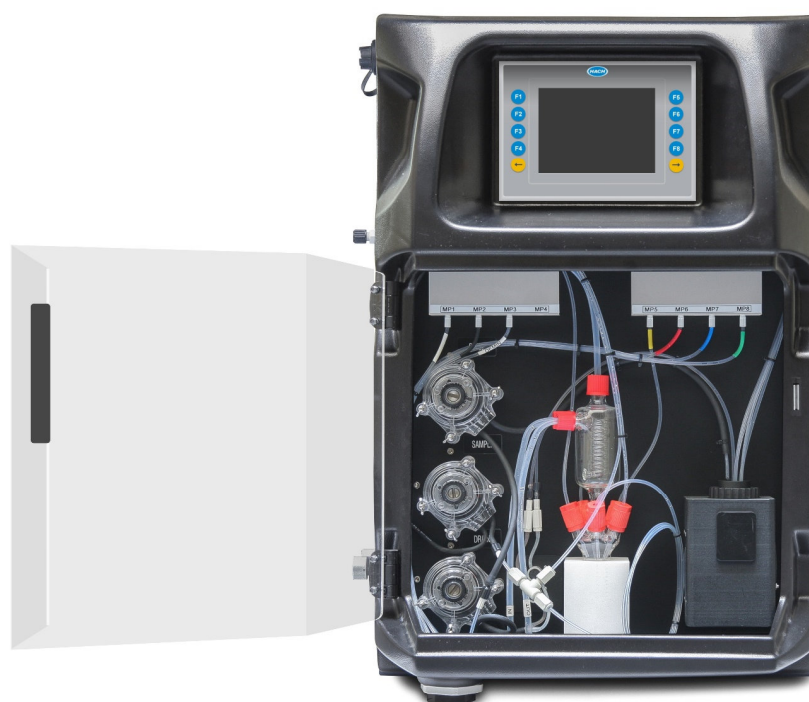
# EZ7700 SERIES

## On-line TN Analyzers

## Analysis of Total Nitrogen

### Applications

- Waste water
- Surface water



## On-line, automatic monitoring of Total Nitrogen (TN) in waste water and general water applications

### About the 7700 Series

The **EZ7700 Series** of On-line TN Analyzers meet the needs for fast, convenient and reliable monitoring of the regulatory sum parameter Total Nitrogen in waste water 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 On-line 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:

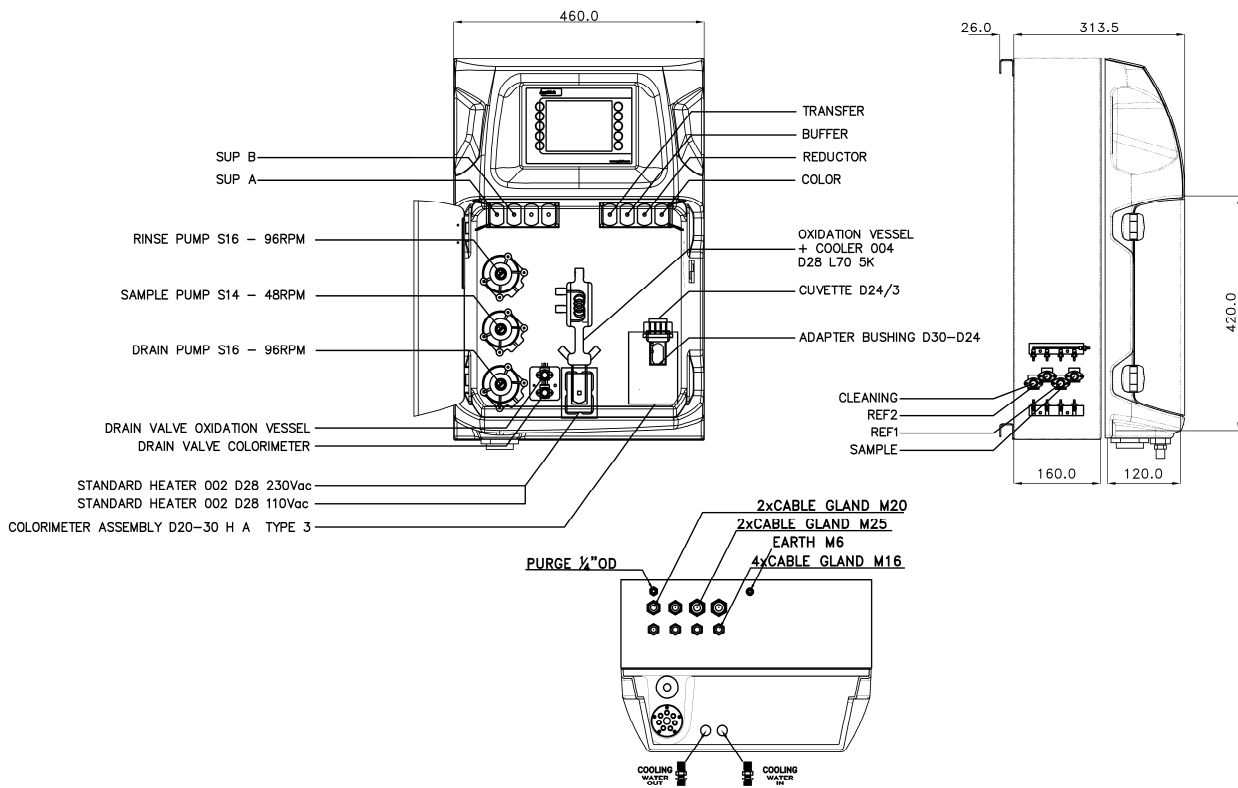
- Full oxidation of all nitrogen species
- Smart automatic features
- Control and communication via industrial panel PC
- Standard 4 - 20 mA signal output with alarm processing
- Standard Ethernet TCP/IP connection
- Multiple stream analysis

## Technical data\*

<b>Analysis method</b>	Colorimetric measurement at 546 nm using hydrazine reduction and NEDD color solution after persulphate destruction in alkaline medium, conform with APHA 4500-N
<b>Parameter</b>	Total nitrogen (also available with NO <sub>3</sub> + NO <sub>2</sub> )
<b>Measuring range</b>	0 – 2 mg/L N; 0 – 5 mg/L N; 0 – 10 mg/L N; 0 – 20 mg/L N
<b>Cycle time</b>	30 minutes incl. digestion of 10 minutes (standard)
<b>Limit of quantification (LOQ)</b>	≤ 200 µg/L
<b>Precision/Repeatability</b>	Better than 4% full scale range for standard test solutions
<b>Cleaning</b>	Automatic; frequency freely programmable
<b>Calibration</b>	Automatic, 2-point; frequency freely programmable
<b>Validation</b>	Automatic; frequency freely programmable
<b>Interferences</b>	Ions like antimony (III) [(Sb) <sup>3+</sup> ], bismuth (III) [(Bi) <sup>3+</sup> ], chloroplatinate [(PtCl <sub>6</sub> ) <sup>2-</sup> ], gold (III) [(Au) <sup>3+</sup> ], iron (III) [(Fe) <sup>3+</sup> ], lead (II) [(Pb) <sup>2+</sup> ], mercury (II) [(Hg) <sup>2+</sup> ], metavanadate [(VO <sub>3</sub> ) <sup>-</sup> ] and silver (I) [(Ag) <sup>+</sup> ] can precipitate with nitrate. Presence of cupric [(Cu) <sup>2+</sup> ] may decompose the diazonium salt which results in a low result. Strong oxidizing agents. NCl <sub>3</sub> results in a false red color. Large amounts of color and turbidity interferes. Fats, oil, proteins, surfactants and tar.
<b>Ambient operating conditions</b>	10 °C – 30 °C +/- 4 °C deviation (50 °F – 86 °F +/- 7.2 °F deviation) at 5 - 95% relative humidity non-condensing
<b>Reagent temperature</b>	Keep between 10 °C - 30 °C (50 °F - 86°F)
<b>Sample pressure</b>	By external overflow vessel
<b>Sample flow rate</b>	100 - 300 ml per minute
<b>Other sample requirements</b>	Temperature: 10 °C – 30 °C (50 °F – 86 °F); Maximum size 100 µm, < 0.1 g/l; Turbidity < 50 NTU
<b>Power</b>	220 - 240 VAC, 2 A, 50/60 Hz Max. power consumption: 150 VA; Other voltages available on request
<b>Instrument air</b>	Dry and oil free according to ISA-S7.0.01-1996 quality standard for instrument air
<b>Demineralized water</b>	For rinsing
<b>Drain</b>	Atmospheric pressure, vented, min. Ø 64 mm
<b>Earth connection</b>	Dry and clean earth pole with low impedance (< 1 ohm) using an earth cable of > 2.5 mm <sup>2</sup>
<b>Analogue outputs</b>	Active 4 - 20 mA max. 500 Ohm load, standard 1, max. 8 (option)
<b>Digital outputs (option)</b>	MODBUS, RS232, RS485
<b>Alarms</b>	Malfunctioning alarm (potential free contact); result alarm (potential free contact)
<b>Protection class</b>	Analyzer cabinet: IP55 / Panel PC: IP65
<b>Materials, hinged part</b>	Thermoform ABS, Door: plexiglass
<b>Materials, wall section</b>	Galvanized steel, powder coated
<b>Dimensions (H X W X D)</b>	69 cm (27.2") x 46.5 cm (18.3") x 33 cm (13")
<b>Total weight</b>	25 kg (55 lbs.)
<b>Certification</b>	CE compliant / UL certified
<b>Warranty</b>	2 years

\* Subject to change without further notice.

## Dimensions - Drawings



## Service packages

### 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.

*Contact us to learn about what Hach Service option is right for you.*

## Order information

<b>EZ7700.99XXXXX</b>	EZ7700 Series, TN 0 – 2 mg/L
<b>EZ7701.99XXXXX</b>	EZ7700 Series, TN 0 – 5 mg/L
<b>EZ7702.99XXXXX</b>	EZ7700 Series, TN 0 – 10 mg/L
<b>EZ7703.99XXXXX</b>	EZ7700 Series, TN 0 – 20 mg/L
<b>EZ7750.99XXXXX</b>	EZ7700 Series, TN 0 – 2 mg/L, NO <sub>3</sub> 0 – 800 µg/L, NO <sub>2</sub> 0 – 600 µg/L

### All options (see Configurator)

<b>E</b>	<b>Z</b>	<b>7</b>	<b>7</b>	<b>X</b>	<b>X</b>	.	<b>9</b>	<b>9</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>2</b>
<b>Measurement range settings / Dilution options</b>														
standard range														
0														
customized														
Z														
<b>power supply</b>														
220 VAC / 50 Hz														
A														
110 VAC / 60 Hz														
B														
Customized														
Z														
<b>number of sample streams</b>														
1 stream														
1														
2 streams														
2														
3 streams														
3														
4 streams														
4														
5 streams														
5														
6 streams														
6														
7 streams														
7														
8 streams														
8														
<b>Outputs</b>														
1x mA														
1														
2x mA														
2														
3x mA														
3														
4x mA														
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5x mA														
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6x mA														
6														
7x mA														
7														
8x mA														
8														
RS232														
A														
Modbus TCP/IP														
B														
Modbus RS485														
C														
AnaCommDa														
D														
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														
<b>Specials</b>														
no adaption, standard version														
0														
customer specific adaptations required, to specify														
S														