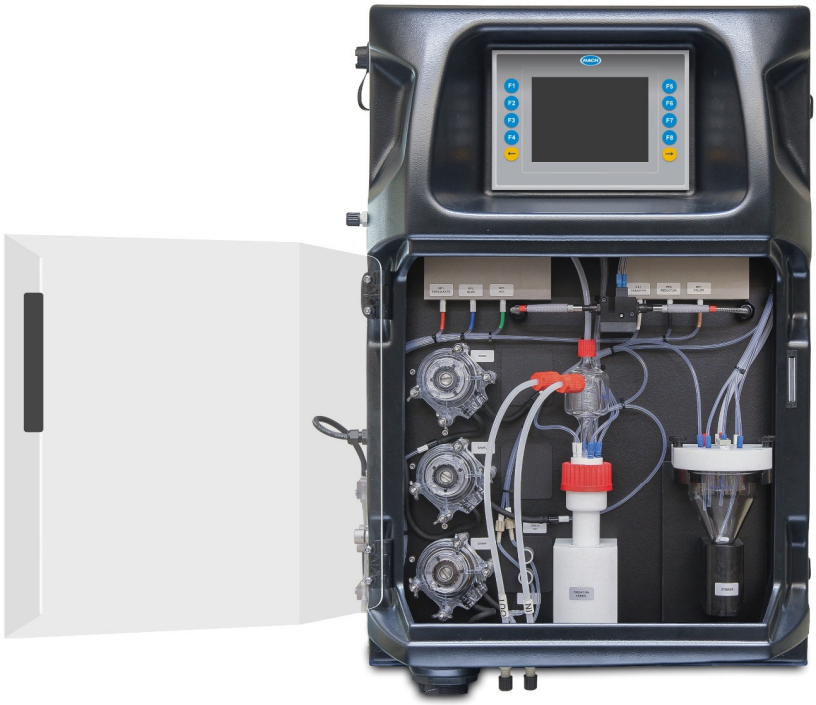
EZ7600 SERIES

On-line TN+TP Analyzers

Analysis of Total Nitrogen and Phosphorus

Applications

- Waste water
- Surface water



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

About the 7600 Series

Similar to the **7700** and **7800 Series**, the **EZ7600 Series** of Total TN+TP Analyzers assure fast, convenient and reliable monitoring of both nutrient sum parameters total Nitrogen and Total Phosphorus in waste water and surface water applications.

Traditionally, compliance of waste water effluent with local discharge regulations is assessed by a number of well-known nutrient parameters, such as nitrate (NO_3^-) and soluble phosphate (PO_4^{3-}) concentrations. However, the dynamic nature of nitrogen speciation and phosphorus fractions in treated waste waters and natural waters cannot be underestimated as it may contribute significantly to the total nutrient load of the water body. In addition to regulatory compliance of nutrient levels, on-line monitoring of either TN or TP may provide deeper insight into the biochemical processes of water treatment operations.

The **EZ7600 Series** use an analytical mainframe specifically developed for the combined, automatic measurement of Total N and P in water samples. Key to this measurement is the use of AppliTek's proprietary sample digestion technique and a new spectrometer with low drift and excellent signal-to-noise ratio:

- Combined measurement of all nitrogen components and complexed phosphate
- Compact high-performance spectrometer
- 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

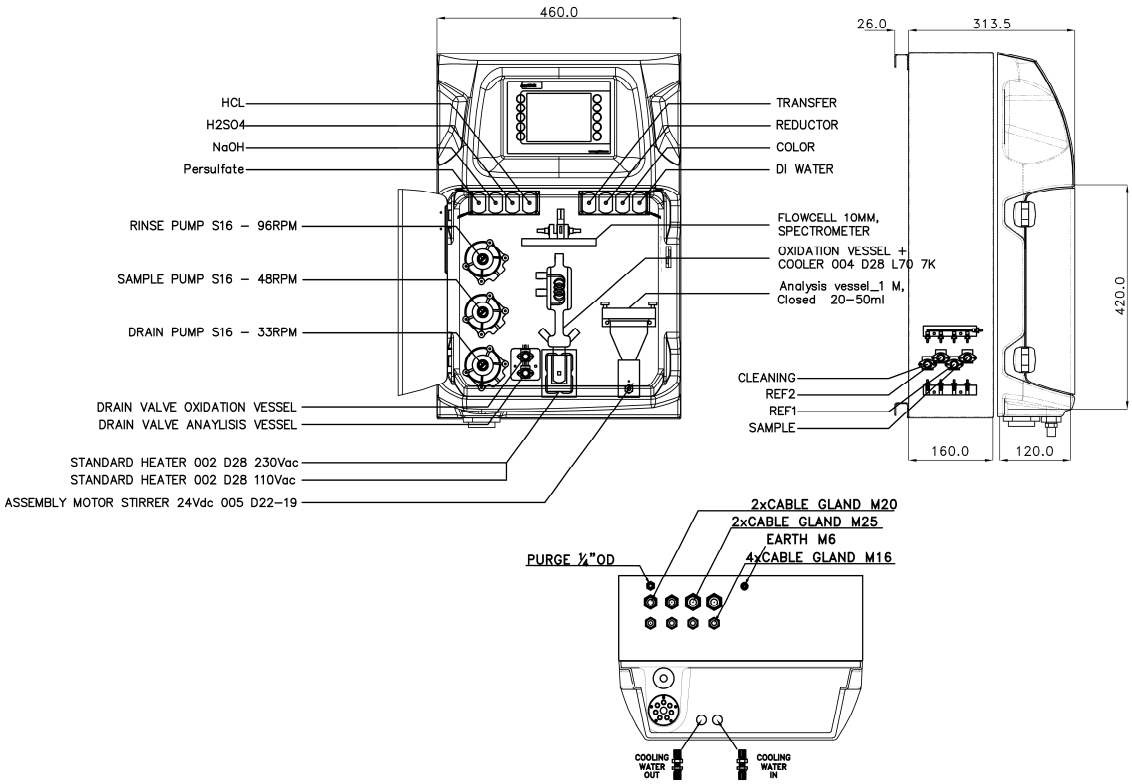
HACH®
Be Right™

Technical data*

Analysis methods	TN: UV photometric measurement at 220 nm after persulphate destruction in alkaline medium, conform with APHA 4500-NO3 (B) TP: Colorimetric measurement at 630 nm using ascorbic acid reduction and molybdate color solution after persulphate destruction in acidic medium, conform with APHA 4500-P
Parameter	Total nitrogen, Total phosphorus
Measuring range	4 predefined combinations starting from 0 – 2 mg/L N + 0 – 1 mg/L P (see page 4)
Cycle time	80 minutes incl. digestion of 60 minutes (standard)
Limit of quantification (LOQ)	≤ 100 µg/L (TN); ≤ 5 µg/L (TP)
Precision/Repeatability	Better than 4% (TN) and 2% (TP) full scale range for standard test solutions
Cleaning	Automatic; frequency freely programmable
Calibration	Automatic, 2-point; frequency freely programmable
Validation	Automatic; frequency freely programmable
Interferences - TN	Dissolved organic matter, surfactants, nitrite [NO_2^-] and chromium (VI) [$(Cr)^{6+}$] interfere. Various inorganic substances not normally found in natural water, such as chlorite [ClO_2^-] and chlorate [ClO_3^-], may interfere. Turbidity can be compensated by 0.45 µm filtration.
Interferences - TP	Arsenicum (V) [$(As)^{5+}$], chromium (VI) [$(Cr)^{6+}$], copper (II) [$(Cu)^{2+}$] > 10 mg/L, iron (III) [$(Fe)^{3+}$] > 10 mg/L, sulphide [$(S)^{2-}$] > 2 mg/L and vanadium [$(V)^{5+}$], silica [$(Si)^{4+}$] > 60 mg/L. Large amounts of color and turbidity interferes. Fats, oil, proteins, surfactants and tar.
Ambient operating conditions	10 °C – 30 °C +/- 4 °C deviation (50 °F – 86 °F +/- 7.2 °F deviation) at 5 - 95% relative humidity non-condensing
Reagent temperature	Keep between 10 °C - 30 °C (50 °F - 86°F)
Sample pressure	By external overflow vessel
Sample flow rate	100 - 300 ml per minute
Other sample requirements	Temperature: 10 °C – 30 °C (50 °F – 86 °F); Maximum size 100 µm, < 0.1 g/l; Turbidity < 50 NTU
Power	220 - 240 VAC, 2 A, 50/60 Hz Max. power consumption: 150 VA; Other voltages available on request
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 mm2
Analogue outputs	Active 4 - 20 mA max. 500 Ohm load, standard 1, max. 8 (option)
Digital outputs (option)	MODBUS, RS232, RS485
Alarms	Malfunctioning alarm (potential free contact); result alarm (potential free contact)
Protection class	Analyzer cabinet: IP55 / Panel PC: IP65
Materials, hinged part	Thermoform ABS, Door: plexiglass
Materials, wall section	Galvanized steel, powder coated
Dimensions (H X W X D)	69 cm (27.2") x 46.5 cm (18.3") x 33 cm (13")
Total weight	25 kg (55 lbs.)
Certification	CE compliant / UL certified
Warranty	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

EZ7600.99XXXXX EZ7600 Series, TN 0 – 2 mg/L, TP 0 – 1 mg/L
EZ7601.99XXXXX EZ7600 Series, TN 0 – 5 mg/L, TP 0 – 2 mg/L
EZ7602.99XXXXX EZ7600 Series, TN 0 – 10 mg/L, TP 0 – 5 mg/L
EZ7603.99XXXXX EZ7600 Series, TN 0 – 50 mg/L, TP 0 – 10 mg/L

All options (see Configurator)

E	Z	7	6	0	X	.	9	9	X	X	X	X	X	2

Measurement range settings / Dilution options	
standard range	**0**
customized	**Z**

power supply	
220 VAC / 50 Hz	**A**
110 VAC / 60 Hz	**B**
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**
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**

Specials	
no adaption, standard version	**0**
customer specific adaptions required, to specify	**S**