**PLEASE NOTE: The following specification contains areas, highlighted with the [ ] symbol. In these areas, the engineer has to make a selection, add specific, project related information and has to delete what is not applicable for the specific project.**

**Single or multi-stream online Analyser for Total Phosphorus (TP) and Orthophosphate (PO4-P)**

Analyser for automatic measurement of Total Phosphorus (TP) and ortho-Phosphate (PO4-P)) in water. The method for TP and ortho-Phosphate is colorimetric measurement at 700 nm using ascorbic acid reduction and molybdate colour solution after persulphate digestion in acidic medium

The digestion does not need cooling water. Reagents are dosed by high precision micropumps. The analyser performs automatic priming, cleaning, calibration and validation. Up to 8 process streams can be monitored.

# Technical Data

|  |  |
| --- | --- |
| **Parameter** | Total P and o-PO4-P |
| **Method**  | TP and o-PO4-P: Colorimetric measurement at 700 nm using ascorbic acid reduction and molybdate colour solution after persulphate digestion in acidic medium, based on APHA 4500-P |
| **Measuring Range**  | See scope of delivery section |
| **Precision** | Better than 2% (TP) full scale range for standard test solutionsBetter than 2% (PO4-P) full scale range for standard test solutions |
| **Detection limit** | TP: ≤ 0.005 mg/Lo-PO4-P: ≤ 0.005 mg/L |
| **Cycle time** | Standard measurement cycle time for both TP and PO4-P: 30 minutes |
| **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** | 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 purposes |
| **Drain** | Atmospheric pressure, vented, min. Ø 64 mm |
| **Cooling Water** | No cooling water is needed |
| **Earth Connection** | Dry and clean earth pole with low impedance (< 1 Ohm) using an earth cable of > 2.5 mm |
| **Analogue Outputs** | Active 4 - 20 mA max. 500 Ohm load, standard 1, max. 8 (option) |
| **Digital Outputs** | Optional: Modbus RS485, Modbus TCP/IP |
| **Alarm** | 1 x malfunctioning, 4 x user-configurable, max. 24 VDC/0.5 A, potential free contacts |
| **Protection Class** | Analyser cabinet: IP44 / Panel PC: IP65 |
| **Material** | Hinged part: Thermoform ABS, door: plexiglassWall 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 / ETL certified |

**Scope of delivery**

[ ] (delete what is not needed)

Analytical Instrument

Online Analyser for

[ ] Total Phosphorus

[ ] Total Phosphorus & Phosphate

Measuring Range

[ ] 0.005-1 mg/L TP

[ ] 0.010-2 mg/L TP

[ ] 0.025-5 mg/L TP

[ ] 0.050-10 mg/L TP

[ ] 0.100-20 mg/L TP

[ ] 0.500-50 mg/L TP

[ ] 0.005-1 mg/L TP/o-PO4-P

[ ] 0.010-2 mg/L TP/o-PO4-P

[ ] 0.025-5 mg/L TP/o-PO4-P

[ ] 0.050-10 mg/L TP/o-PO4-P

[ ] 0.100-20 mg/L TP/o-PO4-P

[ ] 0.500-50 mg/L TP/o-PO4-P

**Process Streams/Channels (maximum 8)**

[\_\_\_] Streams / Channels (fill in, select up to 8)

**Accessories and Options**

[\_\_\_]x 4-20 mA outputs (fill in, select up to 8)

[\_\_\_]x 4-20 mA Outputs and Modbus RS485 (fill in, select up to 4)

[\_\_\_]x 4-20 mA Outputs and Modbus TC/IP (fill in, select up to 4)

[ ] Modbus RS485

[ ] Modbus TCP/IP

[ ] Filtration System, for immersion, pore size [\_\_\_] µm (fill in, select from 50/100/200 µm)

[ ] Filtration System, fast loop, pore size [\_\_\_] µm (fill in, select from 50/100/200 µm)

[ ] Table stand

[ ] Floor stand

[ ] Connection to Homogenization unit

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**Services**

[ ] Manufacturer’s services to perform start-up on instrument to include basic operational training and certification of performance of the instrument.

[ ] Manufacturer’s Service Agreement that covers all the manufacturer’s recommended preventative maintenance, regularly scheduled calibration and any necessary repairs beginning from the time of equipment start-up through to end user acceptance / plant turnover and the first 12 months of end-user operation post turnover.

**Brand:** Hach

**Product:** EZ78xx Total Phosphorus Analyser