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| **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 Volatile Fatty Acids Analyser**

Analyser for automatic measurement of Volatile Fatty Acids (VFA), Bicarbonate, total and partial Alkalinity. The analyser is designed for the monitoring of anaerobic digestion processes.

The measurement method is acid-base titration. The analyser calculates the FOS/TAC ratio from the results for VFA and alkalinitiy as an indicator for the stability of the anaerob digestion process.

Reagents are dosed by high precision micropumps. A built-in nozzle ensures quick and thorough cleaning of the titration vessel.

The analyser is capable of measuring Volatile Fatty Acids every 10-15 minutes. It performs automatic cleaning, calibration and validation. The analyser can be configured to monitor up to 8 process streams.

Self-cleaning heavy-duty filtration system for sample preconditioning, able to handle sludge and wastewaters charged with high levels of suspended solids. The filter pore size is 500 µm (changeable to 200 µm). Sample taken from the pressure pipe to/from the heat exchanger. Shut-off valve for sampling included in the filtration system. Control via the analyser.

**Technical Data**

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| **Measurement method** | Acid-base titration |
| **Measuring range** | See Scope of delivery section |
| **Precision** | Better than 3% full scale range for standard test solutions |
| **Detection limit** | ≤ 10 mg/L |
| **Cycle time** | 10 - 15 minutes |
| **Automatic cleaning** | Yes |
| **Calibration** | Automatic; 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 500 µm, ≤ 0.1 g/L  Most applications require the use of an EZ9130 sampling/filtration system. |
| **Power** | 100 - 240 VAC, 50/60 Hz  Max. power consumption: 120 VA |
| **Instrument air** | Dry and oil free according to ISA-S7.0.01-1996 quality standard for instrument air |
| **Demineralised water** |  |
| **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 Ø 2.5 mm² |
| **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** | Analyser 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 |

**Scope of delivery**

[ ] delete what is not needed

Analytical Instrument

Online Analyser for

[ ] Volatile Fatty Acids (VFA)

[ ] Volatile Fatty Acids (VFA) & Bicarbonate & Total Alkalinity & Partial Alkalinity

Measuring Range

[ ] VFA: 10 - 500 mg/L as acetate equivalent | Bicarb./Alkal. 1 - 50 meq/L or 5,000 mg/L as CaCO3

[ ] VFA: 20 - 1,000 mg/L | Bicarb./Alkal. 1 - 50 meq/L or 5,000 mg/L

[ ]VFA: 100 - 5,000 mg/L | Bicarb./Alkal. 5 - 100 meq/L or 10,000 mg/L

[ ] VFA: 500 - 10,000 mg/L | Bicarb./Alkal. 5 - 100 meq/L or 10,000 mg/L

Process Streams/Channels

[\_\_\_\_] streams (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

[ ] RS232

[ ] Table stand

[ ] Floor stand

Sample preconditioning

[ ] Heavy-Duty Filtration System, self-cleaning, for anaerobic applications, pore size 200 µm

[ ] Heavy-Duty Filtration System, self-cleaning, for anaerobic applications, pore size 500 µm

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.

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**Brand:** Hach

**Product:** EZ7200 Volatile Fatty Acids (VFA) Analyser & EZ9130 Heavy-Duty Filtration System