|  |
| --- |
| **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 Total Manganese Analyser**

Analyser for automatic measurement of Total Manganese in water. The method is colorimetric measurement at 450 nm in a cuvette with 30 mm pathlength after digestion. Reagents are dosed by high precision micropumps. The analyser performs automatic priming, cleaning, calibration and validation. Up to 8 process streams can be monitored. The analyser is capable of measuring up to 2 parameters in parallel. Single sample ("grab sample") measurement is possible.

**Technical Data**

|  |  |
| --- | --- |
| **Measurement method** | Colorimetric measurement using formaldoxime method at 450 nm |
| **Measuring range** | See Scope of delivery section |
| **Precision** | Better than 2% full scale range for standard test solutions |
| **Detection limit** | ≤ 4 µg/L |
| **Cycle time** | 20 min Total Mn (dilution + 5 min)  30 min Total Mn & Mn(II) |
| **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** | 230 VAC, 50/60 Hz  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 |
| **Demineralised water** | For rinsing / 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 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

[ ] Manganese, total

[ ] Manganese, total and Manganese Mn(II), dissolved

Measuring Range

[ ] 0.004 - 0.1 mg/L

[ ] 0.01 - 0.25 mg/L

[ ] 0.01 - 0.5 mg/L

[ ] 0.02 - 1 mg/L

[ ] 0.16 - 4 mg/L (with internal dilution)

[ ] 0.32 - 10 mg/L (with internal dilution)

[ ] 2 - 20 mg/L (with internal dilution - only for Manganese, total)

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

[ ] 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

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:** EZ2000 Total Manganese Analyser

DOC353.52.35245.Jul20