

SULFATE COLORIMETRIC ANALYZER

Compact online analyzer for measurement of sulfate in water

APPLICATION FIELDS

- Drinking water
- Waste water
- Raw water
- Process control

ADVANTAGES / FEATURES

• Different compartments

To ensure complete separation between the electronics (upper case) and the wet part (lower case).

• Low reagents consumption

Minimum operating cost by small reagent consumption, only 2.0 L (0.53 US.gal) for the 16 mm cell / 3.0 L (0.79 US.gal) for the 26 mm cell of each reagent every 30 days with 15 minute analysis frequency.

• Automatic calibration / validation / cleaning

Validation, cleaning and calibration are standard features which significantly reduce downtime and operator intervention ensuring the most accurate results are obtained. Free selectable validation, cleaning and calibration intervals.

• Wide measuring range

The determination ranges of the Sulfate Analyzer vary from 0.5 to 5000 mg/L SO_4^{2-} using internal dilution module.

• Large color touchscreen

The colorimeter is equipped with a graphic touchscreen interface showing measured values and status information. Easy access to menus and functions. Integrated datalogger with USB download.

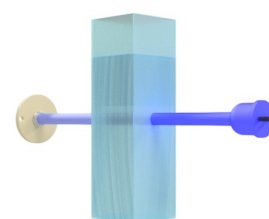


• Factory tested, ready for installation and operation

Just connect the power, sample, and reagent lines and the analyzer is fully operational.

• Measurement principle

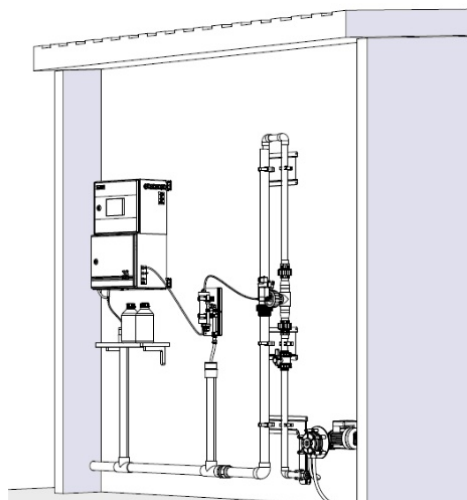
The analyzer uses an adaptation of the turbidimetric method to measure sulfate. The sulfate is precipitated as barium sulfate with an excess of barium chloride. A conditioning reagent is added to maintain the barium sulfate suspension. When the reagent is added to a sample containing sulfate, it will cause turbidity in the sample. The absorbance (turbidity) intensity is proportional to the Sulfate concentration in the sample and is measured at 430 nm.



TECHNICAL SPECIFICATIONS

Measured parameter	SO ₄ ²⁻ (ppb, ppm, mg/l).
Measuring principle	Differential colorimetric absorbance. Turbidimetric method.
Measuring range	0.5 to 50 ppm SO ₄ ²⁻ for the 26 mm cell, 1 to 200 ppm SO ₄ ²⁻ for the 16 mm cell; up to 8000 ppm SO ₄ ²⁻ with internal dilution.
Reproducibility	± 0.5 ppm or ± 5%, whichever is greater (26 mm cell) ± 1 ppm or ± 5%, whichever is greater (16 mm cell).
Analysis Frequency	Freely programmable, batch near-continuous analysis.
Cycle time	6 - 8 minutes, including conditioning before analysis cycle and rinsing after measuring.
Reaction cell	Temperature heated
Sample	Pressure-free vessel Temperature: 5 - 50 °C (41 - 122 °F) Flow Rate: 80 to 500 mL/min Connection: 6 mm (¼-in.)
Drain	Pressure-free, atmospheric drain Connection: 12 mm (½-in.)
N° of streams	1, 2 with integrated switching valve
Dimensions (H x W x D)	604 x 380 x 242 mm (23.6 x 14.8 x 9.4 in)
Weight	Approx. 20 Kg (44 lbs)
Power Supply	Voltage: 100 - 240 VAC 50/60 Hz standard or 24 VDC (option) Power consumption: max. 80 VA
Outputs	2 x 4-20 mA outputs for measured data Modbus RTU RS485
Alarms	2 SPDT programmable potential free relays
Digital Input	Remote start/stop, start extra cycle, skip idle time, emergency stop
Working Temperature	5 - 45 °C (41 - 113 °F)
Humidity	10 to 90% RH (indoor use only)
Installation	Wall mount (standard), bench top support or panel mount (options).
Protection Grade	IP54

INSTALLATION EXAMPLE



The analyzer is easily installed in a minimum amount of wall space.

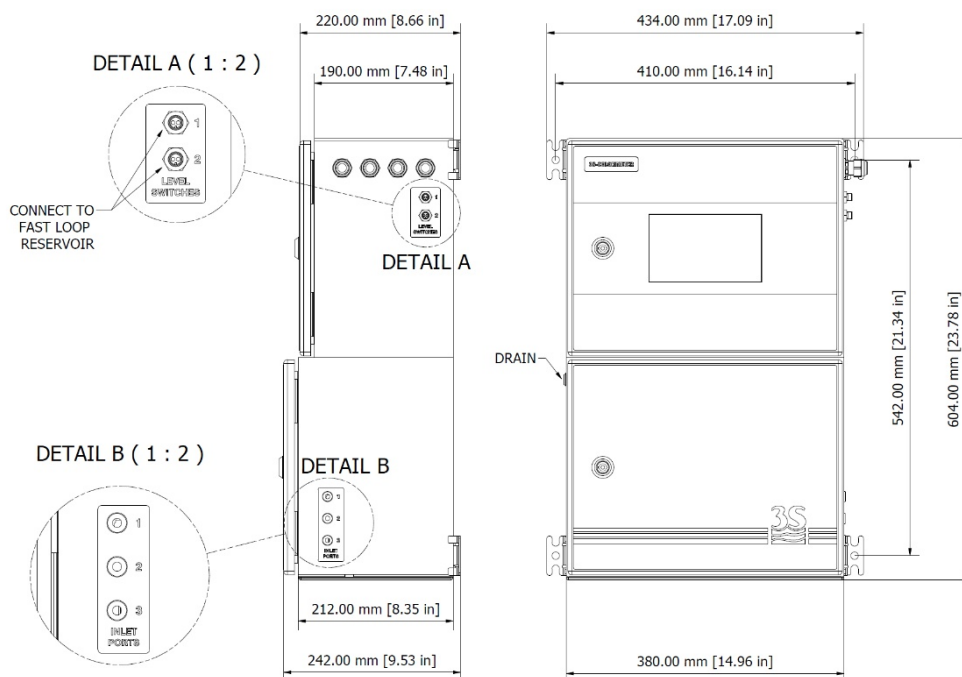
In the picture are included the optional accessories:

- a) A46ERLS000 - Fast Loop external reservoir with level switch
- b) A46SF10020 - Filtration unit 100 micron 230 VAC (other mesh size and input voltages available)
- c) A46SPP0000 - Sampling Pump

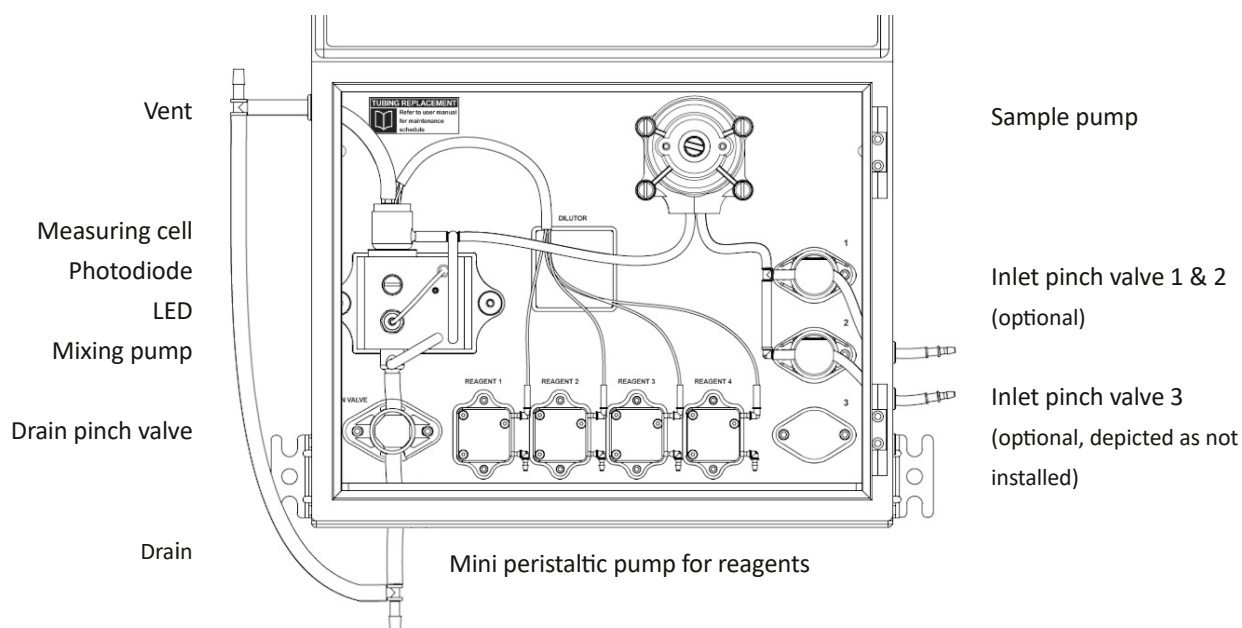
Other accessories, including external dilutors to increase the analyzer range and different kind of sample reservoirs are also available. See our website for more info.



TECHNICAL DRAWING



HYDRAULIC COMPARTMENT VIEW



PRODUCT CODES

CL3-3-430-0-16-SO4	Sulfate Colorimeter, one inlet port, 16 mm cell
CL3-3-430-2-16-SO4	Sulfate Colorimeter, two inlet ports, 16 mm cell
CL3-3-430-3-16-SO4	Sulfate Colorimeter, three inlet ports, 16 mm cell
CL3-3-430-0-26-SO4	Sulfate Colorimeter, one inlet port, 26 mm cell
CL3-3-430-2-26-SO4	Sulfate Colorimeter, two inlet ports, 26 mm cell
CL3-3-430-3-26-SO4	Sulfate Colorimeter, three inlet ports, 26 mm cell