SILICA COLORIMETRIC ANALYZER

Compact online analyzer for measurement of silica in water

APPLICATION FIELDS

- Power plants
- Ultrapure water treatment
- Cooling water
- Water steam cycle
- Condensate analysis
- High-pressure boiler feedwater
- Reversed osmosis
- Turbine protection
- Demineralization plants

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 2.5 L (0.66 US.gal) for the 16 mm cell / 5 L (1.32 US.gal) for the 26 mm cell of each reagent every 60 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 Silica Analyzer vary from trace µg/L to 150 mg/L using internal dilution module.

• Factory tested, ready for installation and operation

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

• 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

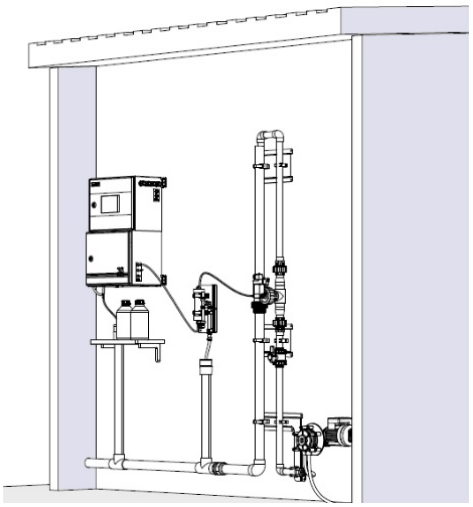
• Measurement principle

Soluble silica reacts with the molybdate ion in an acid medium to form a green-yellow colored silico-molybdic acid complex that in its turn is converted to a blue complex with the addition of the reducing reagent. Oxalic acid is added to minimize the phosphate interference. The absorbance intensity is proportional to the silica concentration in the sample and is determined at 850 nm.

TECHNICAL SPECIFICATIONS

Measured parameter	Si^{4+} / SiO_2 (ppb, ppm, mg/l).
Measuring principle	Differential colorimetric absorbance.
Measuring range	0.5 to 1000 ppb (26 mm cell); 1 to 5000 ppb (16 mm cell); up to 150 mg/L with internal dilution.
Reproducibility	± 0.5 ppb or ± 5%, whichever is greater (26 mm cell) ± 1 ppb or ± 5%, whichever is greater (16 mm cell)
Analysis Frequency	Freely programmable, batch near-continuous analysis.
Cycle time	8-10 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.

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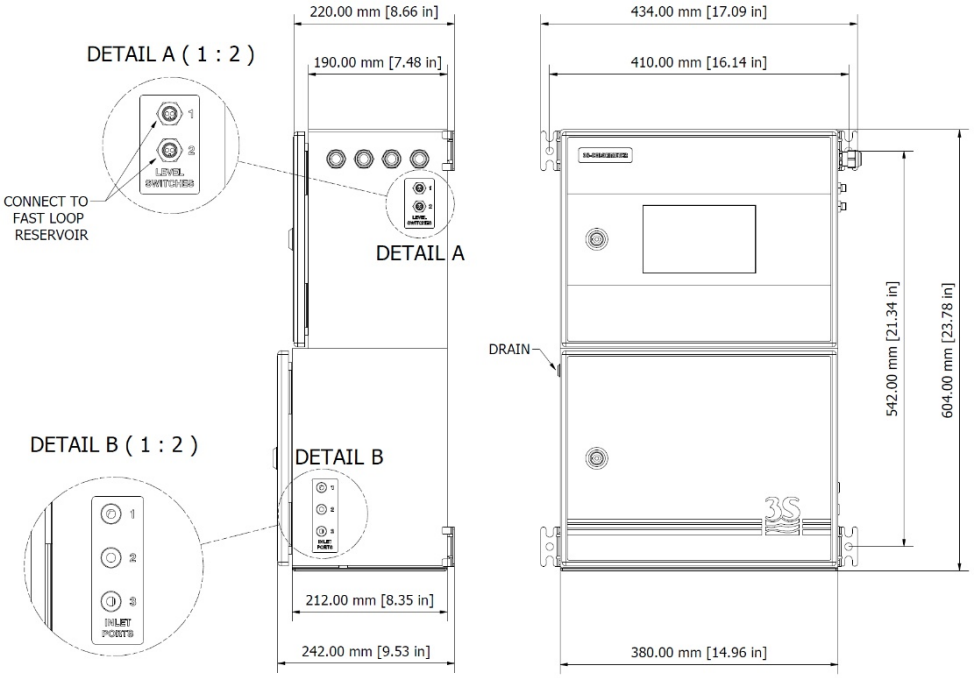
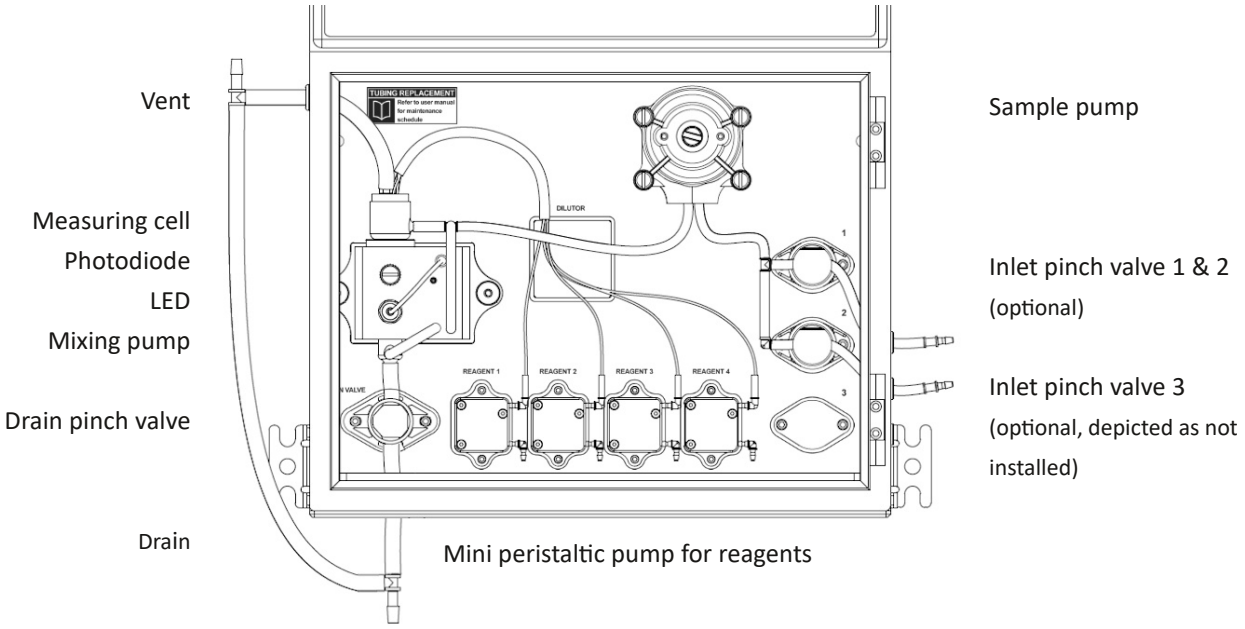
TECHNICAL DRAWING



HYDRAULIC COMPARTMENT VIEW



PRODUCT CODES

CL3-4-850-0-16-SIO2	Silica Colorimeter, one inlet port, 16 mm cell
CL3-4-850-2-16-SIO2	Silica Colorimeter, two inlet ports, 16 mm cell
CL3-4-850-3-16-SIO2	Silica Colorimeter, three inlet ports, 16 mm cell
CL3-4-850-0-26-SIO2	Silica Colorimeter, one inlet port, 26 mm cell
CL3-4-850-2-26-SIO2	Silica Colorimeter, two inlet ports, 26 mm cell
CL3-4-850-3-26-SIO2	Silica Colorimeter, three inlet ports, 26 mm cell