PRODUCT INFORMATION
PROCESS ANALYSIS
SILICA ANALYSER
POLYMETRON 9210

POLYMETRON 9210 Silica Analyser

- **Reduces resin regeneration costs**
- **Determines amount of silica deposits on turbine segments**
- **Providing the lowest maintenance and operating costs in the market**
- **Air bubble elimination**

Reduces water plant costs

Because of the 0.5 ppb lowest detection limit, this analyser can detect early stages of resin saturation, substantially reducing resin regeneration costs. The built-in sequencer (1 to 6 channels) optimises plant investments and favours implementation of best practices in resin monitoring.

Applications

- Demineralisation plants (anion and/or mixed-bed)
- Power plant boiler water, feed water and steam

Accurate and cost effective

Determines amount of silica deposits on turbine segments

Exceptionally low silica levels can be measured. This works with an automatic 2 point calibration, the first point being the “absolute zero” silica background determination. POLYMETRON has developed its own proprietary chemical. The zero method is performed auto-matically without the need of calibration solutions or resin cartridges.
Extensive laboratory tests have shown that even with significant levels of silica present in reagents or in the sample, the innovative method of zeroing the instrument leads to a negligible offset. The second point, “slope” calibration, is performed with a standard solution. This results in accurate measurements that are greater than +/-0.5 ppb.

Providing the lowest maintenance and operating costs in the market

There is no obligation for the operator to work with privately owned reagents; the design of this instrument allows the reagents to be made locally thus reducing maintenance costs to a minimum.

Additionally, operating costs are reduced, as reagent canisters weighing a total of 8 kg (18 lb) when full need replenishment only every 55 days (w/10 min-cycle) or every 84 days (w/15 min-cycle).

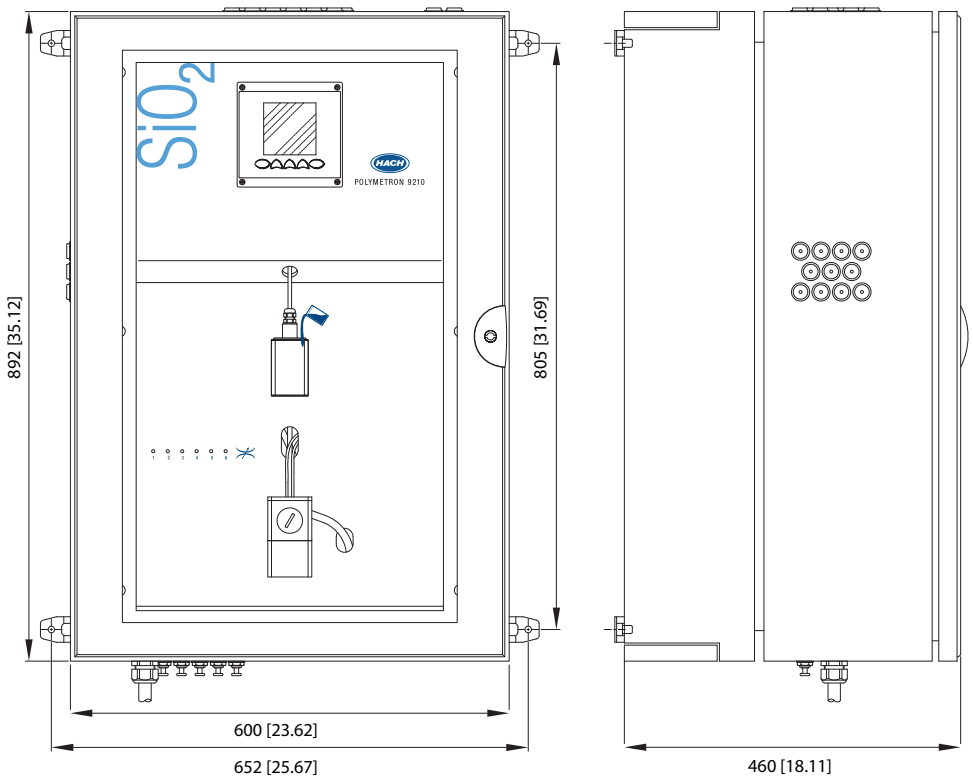
The unique operation of the positive displacement pump means that only annual maintenance is required.

Grab sample function

Easy to use and adaptable

The integrated grab sample function ensures on the spot correct checking and reliable calibrations. Air bubble elimination in the photometric cell results in maintaining measurement accuracy. Both the analyser and sequencer controlled by the same electronics offers both operational advantages and are fully programmable. Measurement time cycles can easily be adapted (adapt. range: 10 mins to 16 hrs).

Panel dimensions – in mm [inches]



Features

Customer Interface

Comprehensive information is available at a glance from the large display (i.e. silica concentration of up to 6 channels, alarm status or concentration trend curves). A built-in datalogger allows measurement values, calibration results and alarm information to be recorded (capacity = 3,200 data). 6 outputs can be assigned to sample concentration on any channel. An extra output will report events like calibration occurrence, warning messages or system alarms. Additional digital communication is available with JBUS/ MODBUS or Profibus DP.

Alarms and Diagnostics

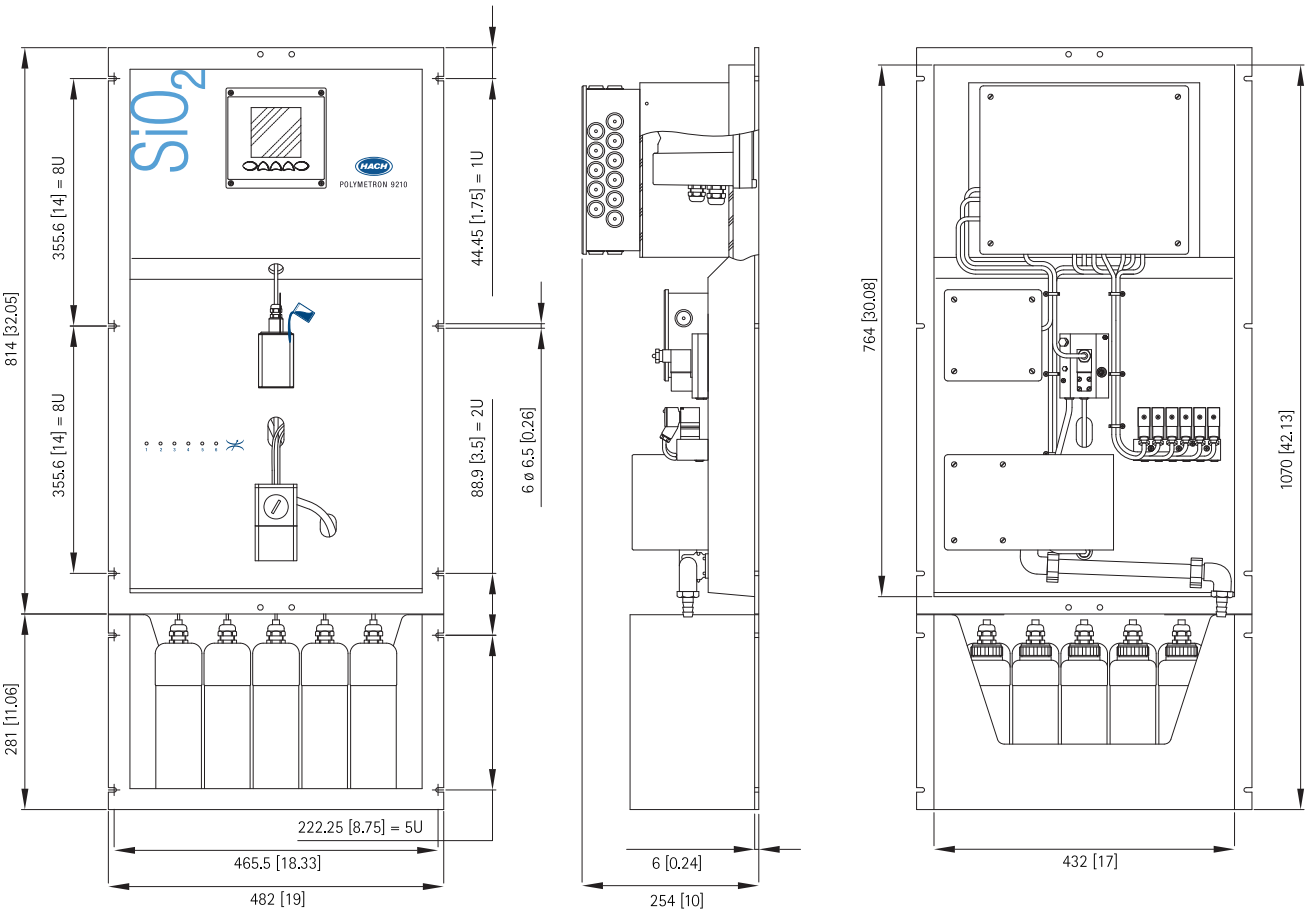
The instrument is equipped as standard with 6 programmable alarm relays assigned for any channel and reporting one of the following:

- High/low silica concentration limits
- Minimum flow detection for a channel
- Occurrence of measurement cycle for a channel
- Warning messages (reagent level low, minimum sample flow, small calibration deviation)
- System alarms (no reagent, no sample, and no power)

A Complete System

Clear step by step instructions are given to simplify maintenance operations such as instrument start-up, long term stand-by and reagent replenishment. The analyser comes in 19" rack format as standard. A wall mounted cabinet is available as an option. Both include a start-up kit with dry reagents and an instruction manual in English. Other languages available on request.

Panel dimensions – in mm [inches]



Technical data

Sampless	No. of sample streams	1–6, programmable sequence	
	Temperature	5–50 °C / 41–122 °F	
	Pressure/Flow-rate	0.2–6 bar (3–87 psi), min. 5 l/h, max. 30 l/h	
Connections	Sample line	Simple fittings for 6 mm O.D. (1/4" O.D. on request) for PE/PTFE tubing	
	Drain	Barbed stem for 12 mm (1/2" I.D.) hose	
	Ambient temperature	5–45 °C (41–113 °F)	
	Power supply	100–240 VAC, ±10 %, 50/60 Hz, 80 VA	
Analysis	Measuring range	0–1,000 ppb SiO_2	0–5,000 ppb SiO_2
	Repeatability	±0.5 ppb or ±2 % whichever is greater	±2 ppb or ±2 %
	Detection limit	<0.5 ppb	2 ppb
	Cycle time	10 minutes	
	Calibration	Automatic two-point chemical zero and slope, programmable frequency, automatic optical zero at each measurement.	
Transmitter	Protection	IP 65 / NEMA 4X	
	In compliance with	EN 61326 (1997) and EN61326 A1 (1998) and EN61326 A2 (2001) Class A, for EMC- EN601010-1 (2001), for low voltage safety (<500 Volts)- GOST certificates, for Russian Federation- UL61010-1, for US and Canada + others.	
	Digital backlit display	Display of concentration, diagnostics, alarm status, calibration constants, historical data, trend curves	
	Programming	Menu operation and clear messages in 5 languages	
	Current output (0/4–20 mA)	Seven: 6 for measurements (copy any channel), 1 for analyser status, 650 ohms load max.	
	Relay outputs	6 contacts for: silica concentration alarm sample, lack of sample, active channel. 2 contacts for: warning (reagent/ calibration solution low level, sample missing, etc.), system alarm (calibration error, hardware failure, etc.) Operation in negative or positive safety. 30 VDC, 0.5 A max.	
	Remote control	- Sample stream activation/deactivation - Alarm acknowledgement	
Options	RS 485 Profibus DP (with repeater)	300...9,600 baud, 32 stations max., JBUS/MODBUS 9.6 kbit/s to 12 Mbit/s, 127 stations max.	
Materials	Panel Cabinet Weight	Polystyrene-polybutadiene copolymer Stove enamelled steel IP 54 Panel: 10 kg (22 lbs), cabinet: 50 kg (110 lbs)	
Maintenance	Every: 55 / 84 days with 10' / 15' cycle	Refill reagents and calibration solution	

HACH LANGE Services

Contact us to place an order, request information or receive technical support.

Seminars and workshops: Practical and hands on training.

On site technical support.

Quality assurance, complete with standard solutions, instrument checks and test solutions.

www.hach-lange.com
Up to date and secure, with down-loads, information and e-shop.

DOC063.52.30030.JMar09

HACH LANGE GMBH
Willstätterstraße 11
D-40549 Düsseldorf
Tel. +49 (0)2 11 52 88-0
Fax +49 (0)2 11 52 88-143
info@hach-lange.de
www.hach-lange.com