

Stamolys CA 70 SI

Analyzer for Silicate Measurement



The Stamolys Analyzer CA 70 SI is a compact analysis system for silicate for use in ultrapure water and boiler feedwater. Silicate content is determined using the photometric measuring principle.

Applications

- In ultrapure water
- In boiler feedwater and steam
- Reverse osmosis and demineralisers

Features and benefits

- Direct reaction in photometer at constant temperature
- Low system volume required due to short distances
- Low reagent requirement
- Small sample volume
- Sample heating system
- Compact instrument design
- User-friendly interface
- Sample stream monitoring and plain text error menu
- Measuring value storage using integrated datalogger
- Automatic self cleaning
- Automatic calibration

Quality made by
Endress+Hauser



ISO 9001

Endress+Hauser

The Power of Know How



Measuring system

The complete measuring system consists of

- StamoLys Analyzer CA 70 SI

Optional:

- Sample pressure kit for reduction to 5 psi
- Sample cooling kit for temperatures higher than 50 °C

Measuring principle

A sample pressure kit is unnecessary if the sample pressure is less than 5 psi (0.4 bar).

After sample conditioning, the analyzer sample pump conveys the sample to a mixing vessel. The reagent pump adds reagent at a specific ratio.

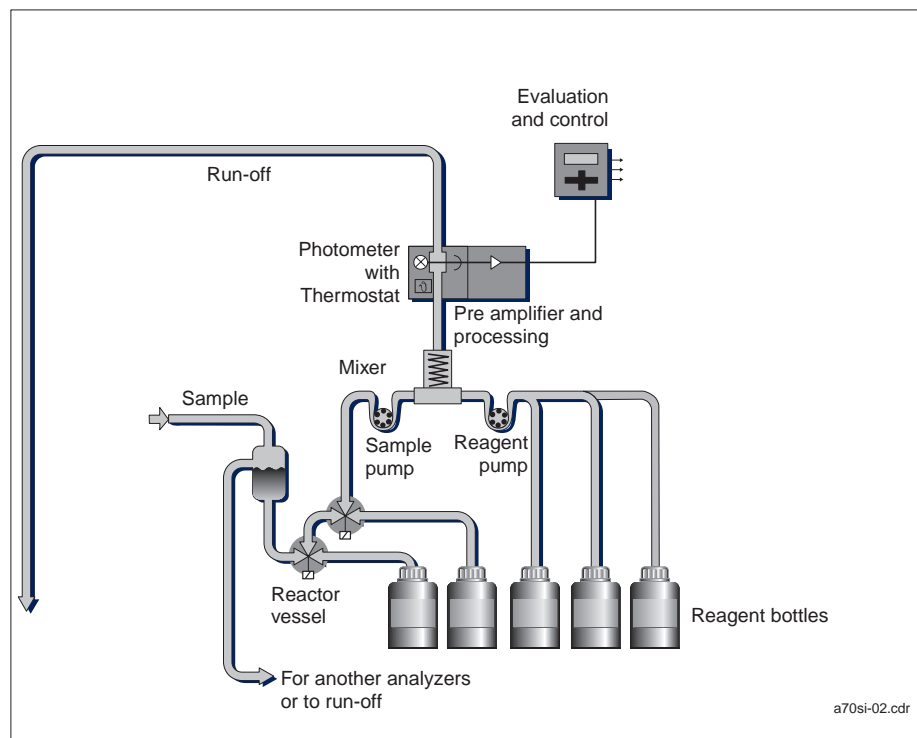
As a result of the reaction with the reagent, the sample turns a characteristic colour which is measured in the photometer. The temperature in the photometer is controlled thermostatically so that the reaction is reproducible and takes place within a short period of time (10 min).

The instrument works acc. to the Heteropoly Blue method.

Silicate and phosphate react with molybdate ion under acidic conditions to form yellow silicomolybdic acid and phosphomolybdic acid complexes. Addition of citric acid destroys the phosphate complexes. Last step is the addition of an amino acid. The amino acid reduces the yellow silicomolybdic complex to silicomolybdic blue. The extinction of the blue complex is proportional to the silicate concentration.

The absorption of measuring light is measured quantitatively in the photometer at 810 nm.

Sulfides interfere at any concentration. Large amounts of iron and phosphate (> 50 mg/l) result in measuring errors.



Application examples
of StamoLys CA 70 SI

Scope of features

An **analogue output at 0/4 ... 20 mA** and **programmable limit contactors** control the process directly.

A **serial interface** permits the digital recording and processing of measured values.

A **plain text error menu** facilitates diagnosis in case of operating trouble.

An extensive **self-monitoring function** prevents any malfunctioning.

An **automatic self-cleaning feature** prevents deposits and invalidation of measured values.

At programmable intervals, the system performs an **automatic calibration** and monitors the calibration parameters in order to ensure reliable measured values. Using standard measuring cycles restocking of reagents is necessary every month.

Technical data

General data	Manufacturer	Endress+Hauser
	Product designation	StamoLys Analyzer CA 70 SI
Mechanical construction	Dimensions of Analyzer (h x w x d)	840 x 530 x 335 mm
	Weight	approx. 40 kg
	Capacity of reagent tank	3 x 1 l
	Capacity of cleaning liquid tank (option)	1 l
	Capacity of standard liquid tank	1 l
Materials	Enclosure	Stainless steel
	Front window	Plexiglass®
	Continuous tube	Norprene®
	Pump tube	Tygon®
Input	Measuring parameter	Silicate
	Measuring range	1.0 ... 200 ppb (µg/l) Silicate 0.1 ... 5.0 ppm (mg/l) Silicate
	Measuring light	810 nm
	Measuring interval	10 ... 120 min
	Accuracy	3% of measuring range
	Sample requirements	50 ml/measurement, 5 ml/min
	Reagent requirements	3 x 0.2 ml/measurement, 3 x 1 l/month
Output	Analogue output	0/4 ... 20 mA
	Permitted load	max. 500 Ω
	Data interface	RS 232 C
	Relay outputs	2 limit contactors, 1 error signalling contactor
	Load rating	30 VA, max. 48 V AC, 30 V DC at 0.5 A
Electrical data	Power supply	115 V AC / 230 V AC ±10%, 50/60 Hz
	Power consumption	approx. 40 VA
	Current drain	approx. 0.45 A
Maintenance and calibration	Calibration interval	0 ... 72 h
	Cleaning interval	0 ... 72 h
	Maintenance interval	3 months
	Maintenance requirements	30 min/week
Ambient conditions	Temperature	5 ... 40 °C
	Ingress protection	IP 43

Subject to modifications.

Technical data

Specification for customer sample conditioning

Sample conditioning	Sample temperature	< 60 °C
	Sample pressure	< 0.4 bar (5 psi)

For 1 measuring point

Sample flow rate	min. 0.2 l/h or 5 ml/min
Sample per measurement	50 ml
Sample condition	low in solids (particle size < 50 µm)
Process connection	3.2 mm (for tube ID 3.2 / OD 6.3)

For 2 measuring points

Sample distribution	built-in in analyzer
Measuring point identification	Channel 1: 0 V signal at terminal 55 Channel 2: +24 V signal at terminal 55 (+24 V signal applied to terminal 54)
Pulse length	min. 5 s from start of measurement

Accessories

Wall bracket for CA 70

- cooled: Order No.: 51503063
- non-cooled: Order No.: 51503061

Reagent sets for CA 70 SI:

- Reagent solution SI 1, SI 2, SI 3, 1l
Order No.: CAY640-V10AAE
- Inactive reagent SI 1, SI 2, SI 3, 1l
Order No.: CAY640-V10AAH

- Standard 500 µg/l for CA 70 SI, 1l
Order No.: CAY642-V10C05AAE
- Standard 1000 µg/l for CA 70 SI, 1l
Order No.: CAY642-V10C10AAE
- Cleaning solution for CA 70SI, 1l
Order No.: CAY641-V10AAE

Product structure

StamoLys Analyzer for Silicate CA 70 SI						
Measuring range						
A	1.0 ... 200 ppb					
B	0.1 ... 5.0 ppm					
Y	Special version acc. to customer specifications					
Sample transfer						
1	Sample from a measuring point					
2	Alternating samples from two measuring points					
3	Alternating samples from six measuring points					
Power supply						
0	230 V AC					
1	115 V AC					
Sample conditioning						
A	No sample pressure and no cooling system					
B	With sample pressure reduction and no cooling system					
C	With cooling system and no sample pressure reduction					
D	With sample pressure reduction and with cooling system					
Equipment						
1	without reagent cooling					
2	with reagent cooling					
Communication						
A	RS 232 and 0/4 ... 20 mA					
Additional equipment						
1	Quality certificate					
CA 70 SI-						
						complete order code

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