

Stamolys CA 70 HA

Analyzer for Total Hardness Measurement



The Stamolys Analyzer CA 70 HA is a compact analysis system for total hardness as calcium carbonate for use in drinking water applications. Total hardness is determined using the photometric measuring principle.

Applications

- Total hardness monitoring of ion exchangers
- Precipitant monitoring in drinking water plants

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 user interface
- Sample stream monitoring and plain text error menu
- Measuring value storage using integrated data logger
- Automatic self cleaning
- Automatic calibration

Quality made by
Endress+Hauser



ISO 9001

Endress+Hauser

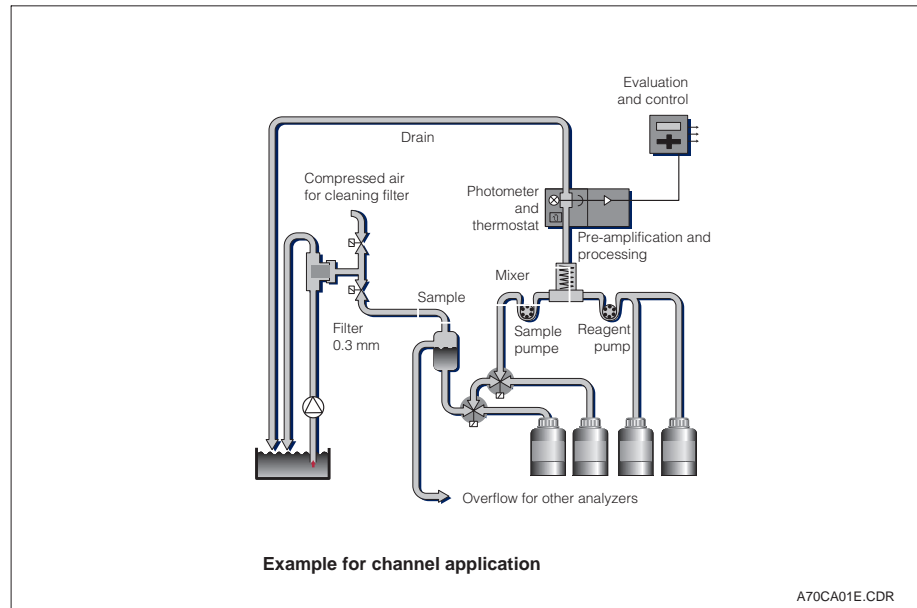
The Power of Know How



Measuring system

The complete measuring system consists of

- the StamoLys Analyzer CA 70 HA
- Sample treatment system



Application examples
of StamoLys CA 70 HA

Measuring principle

Sample conditioning is not necessary if the sample is clean (particle size $< 50 \mu\text{m}$), the sample temperature is less than 60°C (140°C), and the sample pressure less than 0.4 bar (5 psi).

After sample conditioning, the Analyzer sample pump conveys the permeate 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 (4 min).

The instrument works acc. to the LR Ca method. The indicator buffer combines with calcium and magnesium and turns the sample from blue into red. The colour intensity is proportional to the total hardness.

The absorption of measuring light is measured quantitatively in the photometer at 565 nm. The measuring light is compared in the photometer with a reference light at a wavelength of 660 nm to prevent any effects on results due to turbidity.

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. At standard measuring cycles restocking of reagents is sufficient only once a month.

Technical data

General data	Manufacturer	Endress+Hauser
	Instrument designation	StamoLys Analyzer CA 70 HA
Mechanical construction	Dimensions of Analyzer (h x w x d)	840 x 530 x 330 mm (non-cooled version) 840 x 530 x 430 mm (cooled version)
	Weight	approx. 40 kg (non-cooled version) approx. 50 kg (cooled version)
	Capacity of reagent tank	2 x 1 l
	Capacity of cleaning liquid tank	1 l
	Capacity of standard liquid tank	1 l
Materials	Enclosure	Stainless steel
	Front window	Plexiglass®
	Continuous tube	Norprene®
	Pump tube	Tygon®, Viton®
Input	Measuring parameter	Total hardness as calcium carbonate
	Measuring range	0.2 10 ppm Ca CO ₃ (mg/l) 0.8 80 ppm CaCO ₃ (mg/l)
	Measuring light	565 nm
	Reference light	660 nm
	Measuring interval	4 ... 120 min
	Accuracy	2% of upper measuring range
	Sample requirements	15 ml/measurement, 1 ml/min
	Reagent requirements	2 x 0.2 ml/measurement, 2 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 (non-cooled) approx. 200 VA (cooled)
	Current drain	approx. 0.15 A (non-cooled) approx. 0.9 A (cooled)
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 (140 °F)
	Sample pressure	< 0.4 bar (5 psi)

For 1 measuring point

Sample flow rate	min. 0.3 l/h or 5 ml/min
Sample per measurement	20 ml
Sample condition	low in solids (particle size < 50 µm)
Process connection	3.2 mm (for tube ID 3.1 / OD 6.3)

For 2 measuring points

Sample distribution	must be external
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 HA:

- Reagent solution HA1, HA2:
Order No.: CAY743-V10AAE

- Standard solution 10 mg/l CaCO₃
Order No.: CAY745-V10C10AAE
- Standard solution 20 mg/l CaCO₃
Order No.: CAY745-V10C20AAE

Product structure

StamoLys Analyzer for Carbonate Hardness CA 70 HA																							
Measuring range																							
	A	0.2 ... 10 ppm CaCO ₃ (mg/l)																					
	B	0.8 ... 80 ppm CaCO ₃ (mg/l)																					
	Y	Special version acc. to customer specifications																					
Sample transfer																							
	1	sample from a measuring point																					
	2	alternating samples from two measuring points																					
Power supply																							
	0	230 V AC																					
	1	115 V AC																					
Sample collector																							
	A	CA 70 without sample collector																					
	B	CA 70 with sample collector																					
Equipment																							
	1	without reagent cooling																					
	2	with reagent cooling																					
Communication																							
	A	RS 232 and 0/4 ... 20 mA																					
Additional equipment																							
	1	Quality certificate																					
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