

Stamolys CA 70 AL

Analyzer for Aluminium Measurement



The Stamolys Analyzer CA 70 AL is a compact analysis system for low range concentrations of aluminum for use in drinking water and wastewater applications. Aluminum is determined using the photometric measuring principle.

Applications

- Phosphate elimination in wastewater plants
- Precipitant monitoring in wastewater and drinking water applications

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

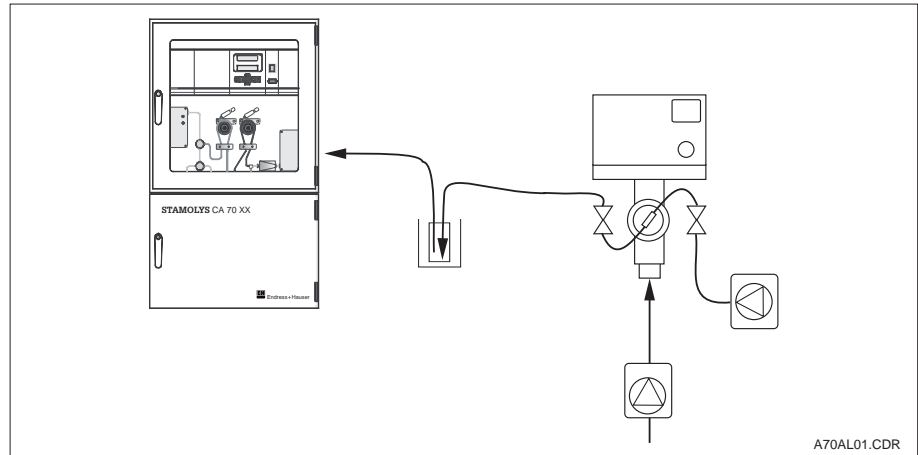


Measuring system

- The complete measuring system consists of
- StamoLys Analyzer CA 70 AL
 - Sample treatment system
e.g. backflush filter StamoClean CAT 220

Complete measuring system

StamoLys Analyzer CA 70 AL with backflush filter CAT 220



Measuring principle

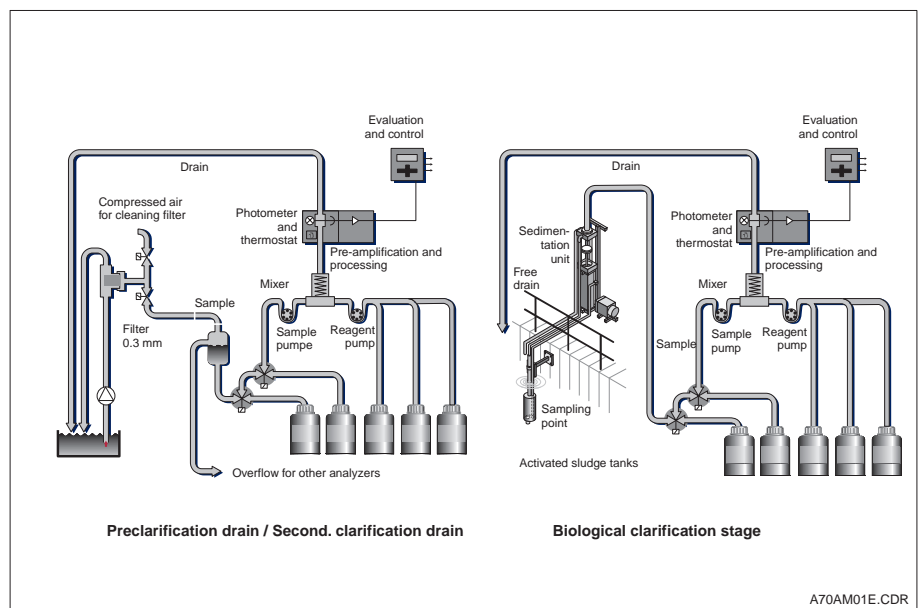
Sample conditioning is not necessary if the sample is clean (particle size < 50 µm), the sample temperature is less than 60°C (140 °F) and the sample pressure less than 0.4 bar (5 psi).

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 (2 min).

The instrument works acc. to the ECR method. The eriochrome cyanine R indicator turns the sample into an orange red colour if aluminium is present. The colour intensity is proportional to the aluminium concentration.

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 880 nm to prevent any effects on results due to turbidity.

Fluoride interferences can be corrected with a special F- factor in the instrument.



Application examples of StamoLys CA 70 AL

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 |
| | Product designation | StamoLys Analyzer CA 70 AL |
| 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 | 3 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 | Aluminium |
| | Measuring range | 10 300 ppb Al (µg/l) 50 1000 ppb Al (µg/l) |
| | Measuring light | 565 nm |
| | Reference light | 880 nm |
| | Measuring interval | 2 ... 120 min |
| | Accuracy | 3% of upper measuring range |
| | Sample requirements | 15 ml/measurement, 1 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 (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 3.2 / 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 AL:
 - Reagent solution AL1, AL2, AL3, 1l
Order No.: CAY940-V10AAE
 - Inactive reagent AL1, AL2, AL3, 1l
Order No.: CAY940-V10AAH
- Standard 100 µg/l Al, 1l
Order No.: CAY942-V10C10AAE
 - Standard 250 µg/l Al, 1l
Order No.: CAY942-V10C25AAE
 - Standard 500 µg/l Al, 1l
Order No.: CAY942-V10C50AAE

Product structure

StamoLys Analyzer for Aluminium CA 70 AL

Measuring range

- A 10 ... 300 ppb Al (µg/l)
- B 50 ... 1000 ppb Al (µg/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

CA 70 AL-

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complete order code

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