

# Stamolys CA 70 CU

## Analyzer for Copper Measurement



The Stamolys Analyzer CA 70 CU is a compact analysis system for copper for use in industry applications. Copper is determined using the photometric measuring principle.

### Applications

- Copper monitoring in industrial wastewater plants
- Copper monitoring in process industry

### 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 calibration

Quality made by  
Endress+Hauser



ISO 9001

# Endress+Hauser

The Power of Know How



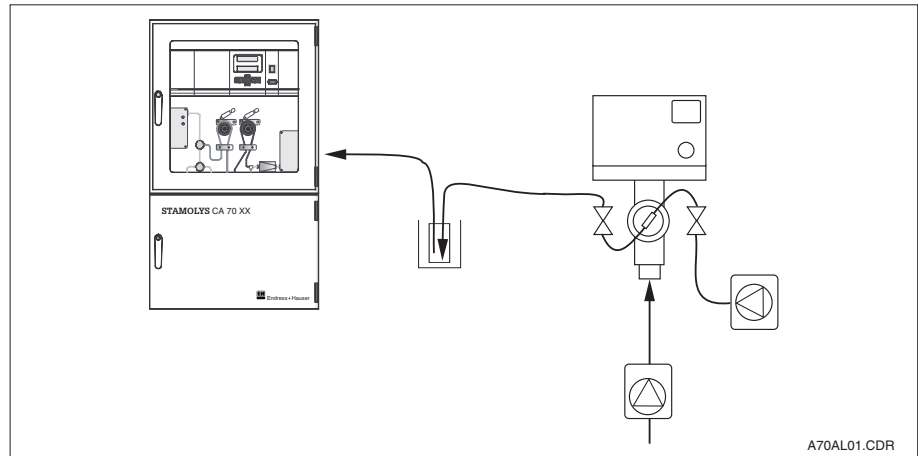
# Measuring system

The complete measuring system consists of

- the StamoLys Analyzer CA 70 CU
- Sample treatment system  
e.g. backflush filter StamoClean CAT 220

Complete measuring system

StamoLys Analyzer CA 70 CU with backflush filter CAT 220



# Measuring principle

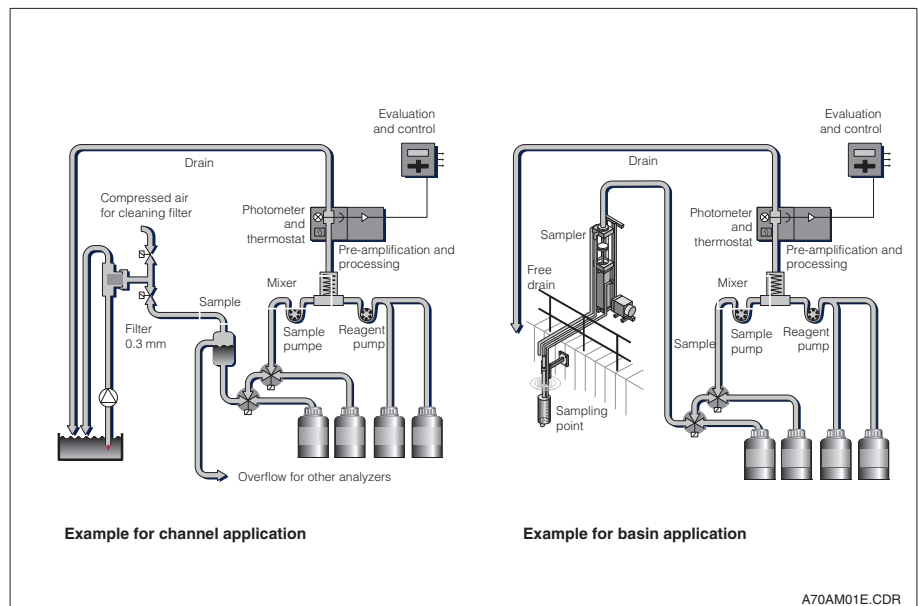
Sample conditioning is not necessary if the sample is clean (particle size < 50 µm), the sample temperature is less than 45°C (115 °F) and the sample pressure less than 0.4 bar (5 psi).

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 chelate method. The copper reagent incorporates an indicator dye which turns the sample from colourless into pink if copper is present. The colour intensity is proportional to the copper concentration.

The chelate method only detects free copper ions. Complex copper cannot be detected by this method.

The absorption of measuring light is measured quantitatively in the photometer at 430 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.



Application examples of StamoLys CA 70 CU

## 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

<b>General data</b>	Manufacturer	Endress+Hauser
	Instrument designation	StamoLys Analyzer CA 70 CU
<b>Mechanical construction</b>	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 standard liquid tank	1 l
<b>Materials</b>	Enclosure	Stainless steel
	Front window	Plexiglass®
	Continuous tube	Norprene®
	Pump tube	Tygon®, Viton®
<b>Input</b>	Measuring parameter	Copper
	Measuring range	0.1 ..... 2.00 ppm Cu (mg/l) 0.2 ..... 5.00 ppm Cu (mg/l)
	Measuring light	430 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	2 x 0.2 ml/measurement, 2 x 1 l/month
<b>Output</b>	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
<b>Electrical data</b>	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)
<b>Maintenance and calibration</b>	Calibration interval	0 ... 72 h
	Maintenance interval	3 months
	Maintenance requirements	30 min/week
<b>Ambient conditions</b>	Temperature	5 ... 40 °C
	Ingress protection	IP 43

Subject to modifications.

# Technical data

## Specification for customer sample conditioning

<b>Sample conditioning</b>	Sample temperature	< 45 °C (115 °F)
	Sample pressure	< 0.4 bar (5 psi)
<b>For 1 measuring point</b>	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)
<b>For 2 measuring points</b>	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 CU:
  - Reagent solution CU1, CU2, 1l:  
Order No.: CAY850-V10AAE
  - Inactive reagent CU1, CU2, 1l:  
Order No.: CAY850-V10AAH
- Standard solution 1 mg/l Cu, 1l  
Order No.: CAY852-V10C10AAE
- Standard solution 2 mg/l Cu, 1l  
Order No.: CAY852-V10C20AAE

## Product structure

StamoLys Analyzer for Copper CA 70 CU	
<b>Measuring range</b>	
A	0.1 ... 2.00 ppm Cu (mg/l)
B	0.2 ... 5.00 ppm Cu (mg/l)
C	Special version acc. to customer specifications
<b>Sample transfer</b>	
1	sample from a measuring point
2	alternating samples from two measuring points
<b>Power supply</b>	
0	230 V AC
1	115 V AC
<b>Sample collector</b>	
A	CA 70 without sample collector
B	CA 70 with sample collector
<b>Equipment</b>	
1	without reagent cooling
2	with reagent cooling
<b>Communication</b>	
A	RS 232 and 0/4 ... 20 mA
<b>Additional equipment</b>	
1	Quality certificate
<b>CA 70 CU-</b>	<b>complete order code</b>

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