MEMOSENS

Keep your power plant healthy

Online trace analysis of silica with Liquiline System CA80SI

Liquiline System

The colorimetric analyzer supports optimum performance of turbines, boilers and ion exchangers.

- Precise online values directly comparable to lab results thanks to the standard heteropoly blue method
- Best reliability and low maintenance thanks to a unique combination of peristaltic and dispenser pumps
- High process availability due to automatic cleaning and calibration
- Easy adaptation to any kind of application thanks to optional 6 sample channels
- Easy upgrade to complete measuring station by connecting up to 4 Memosens sensors
- Advanced diagnostics and remote access for fast remediation in case of errors
- Seamless integration into process control systems thanks to digital field buses such as Modbus, EtherNet/IP, or PROFIBUS

Endress+Hauser

People for Process Automation

Protect expensive plant equipment

Silica - Key parameter in power plants
At 15 %, silicon is the second most abundant element in the earth's crust. It is present in all natural water supplies. In power plants only low silica concentrations are permitted in boiler feedwater, since silica evaporates into the steam as a result of thermal stress and high pressure. The resulting deposits of insoluble silicon dioxide on internal boiler walls, heat exchangers and turbine blades have an adverse effect on a power plant's efficiency. For this reason, the maximum silica content permitted in boiler feedwater is often contractually agreed on between suppliers and power plant operators.

Liquiline System CA80SI helps provide proof that your water quality has been maintained within the required limits since it delivers online values directly comparable to lab results. The system also provides detailed logbooks for data recording.

Keep your turbines and boiler tubes safe
Silica deposits on turbines can cause imbalances which can in turn lead to vibrations and even failures.
When installed at the boiler drum, Liquiline System CA80SI supports you in maintaining a high water purity:

- Preventing silica from carrying into the steam and thus avoiding deposits on turbine blades
- Maintaining optimum thermal performance because boiler tubes are not affected by silica deposits
- Reducing expensive blow-down cycles because online measurement enables early counter measures against high silica levels.

Keep your ion exchangers healthy
Silica monitoring at the ion exchanger is common because silica is one of the first ions passing through the ion exchanger bed when it nears exhaustion. Online silica measurement with Liquiline System CA80SI provides an early indication when regeneration is needed to avoid break throughs of ion exchanger beds.

Have an eye on your condensers
Online measurement of silica in feed water returning from the condenser to the boiler allows an early detection of impurities and helps spot cooling water leaks inside the condenser.

Liquiline System CA80SI 6-channel version: Allows you to draw samples from all necessary process points.

Decrease operating costs, increase availability

Reduced operating costs

- The analyzer is easy to install. Sample hoses are directly connected to the filter and pressure relief valve.
- The uniform, intuitive operation of the analyzer is identical to the concept of other online analysis parameters, such as conductivity. This speeds up commissioning and configuration.

Increased availability and low maintenance

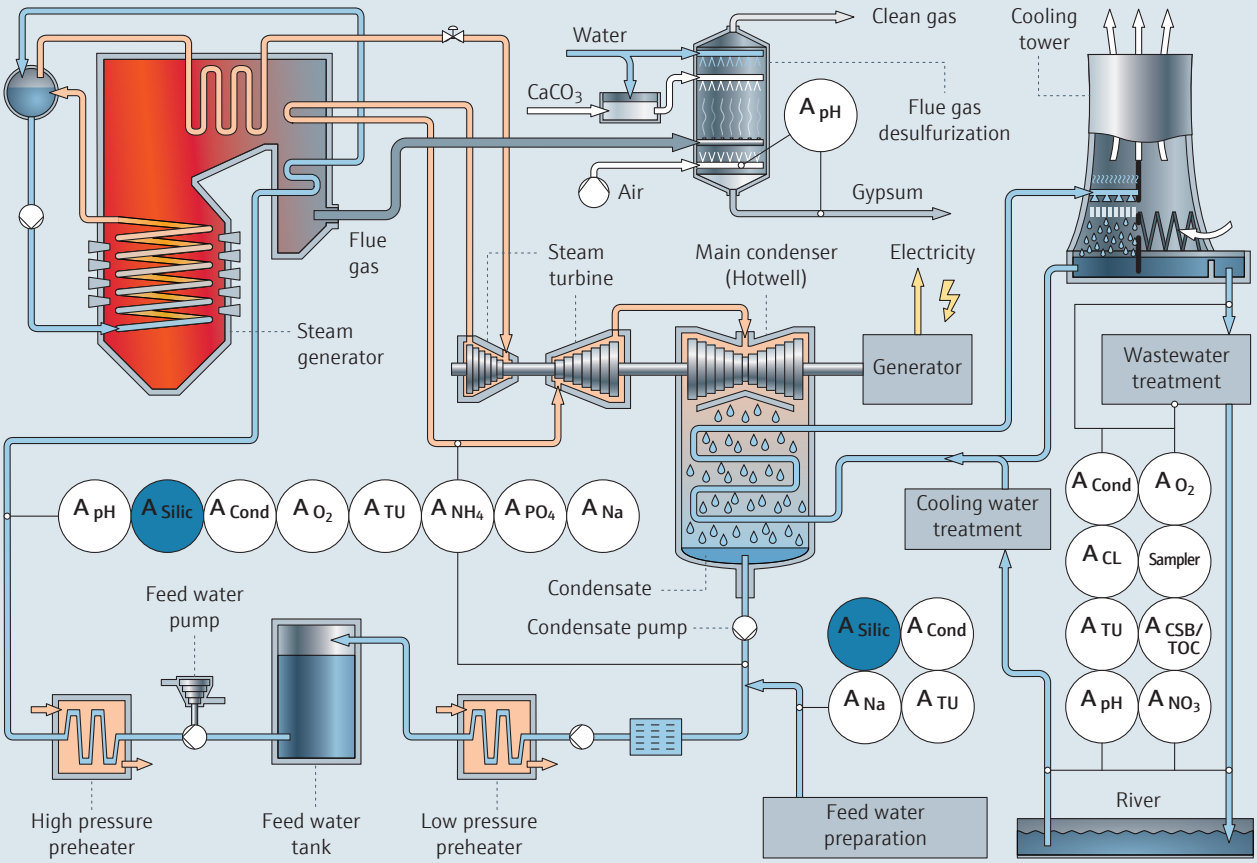
- Liquiline System's unique combination of peristaltic and ultra-precise dispenser pumps is the basis for reliable operation.
- The analyzer's automatic cleaning and calibration functions ensure that it works accurately over an extended period without manual intervention.
- The optional integrated web server enables remote access to the analyzer so that you can analyze possible process disturbances and decide on required measures quickly.
- Simple maintenance: The modular design allows for easy access and simplifies replacement of individual components.

Future-proof flexibility

- Adaptation to every required measuring point in your process is easy with the option of up to 6 sample channels.
- Connect up to 4 Memosens sensors, e.g. for conductivity, to your analyzer and thus reduce the investment costs for your plant.
- Integrate the analyzers seamlessly into your process control systems via Modbus, PROFIBUS DP, EtherNet/IP and web server communication.

Liquiline System CA80SI helps you keep the silica levels of your steam water cycle completely under control and ensure maximum lifetime of expensive plant equipment.

Examples for analytical measuring points in power plants



Complete package for the key parameters of your power plant

CA76NA sodium analyzer
The potentiometric system for online sodium analysis perfectly supplements the silica analyzer for comprehensive control of the feedwater quality.

- Provides highly accurate measurement of sodium levels thanks to separate pH reference electrode
- Is cost-efficient due to low consumption of DIPA reagent and standard solution
- Perfectly adaptable thanks to up to 6 sample channels with freely adjustable measuring intervals

Condumax CLS15D conductivity sensor
The Condumax CLS15D conductivity sensor meets the range of conductivity measurements that are important for the steam water cycle in power plants, from total conductivity over cation and differential conductivity to degassed cation conductivity.
The sensor is both durable and low maintenance.

Orbisint CPS11D pH sensor
A low pH value of the feedwater can lead to corrosion of turbines, boilers and pipes. That's why sometimes the addition of ammonia is necessary to increase the pH value.
Orbisint CPS11D pH sensor with KCl storage measures reliably at low conductivities to help control ammonia dosing.

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