Application

pH measurement in flue gas desulfurization plant (FGD)

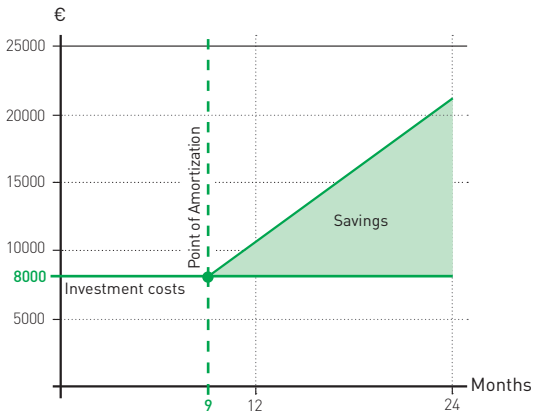
Fully automatic cleaning system for low-maintenance pH measurement

When performance really counts

Flue gas scrubbing is a process in which pollutants such as sulfur dioxide are scrubbed out by adding milk of lime in gas scrubbers. JUMO has developed a high-quality system for this application to monitor and control the pH value reliably under demanding process conditions. That saves you money while protecting people and the environment.

How you can save money with automatic cleaning of pH electrodes

Regular maintenance and cleaning of the measuring point is especially important for process media with a high solid content in which coatings form that adhere to and block the pH electrode. An automatic cleaning system makes good sense economically in these cases. Considering the product lifecycle as a whole, amortization of the entire measuring point requires only about nine months.



Assumption:

Due to blocking of the sensor, mechanical sensor cleaning is needed once a day

One-time investment:

8000 € * for the automatic cleaning system

Savings:

- 1130 € / year in sensor costs by increasing the service life from four to eight weeks
- 9125 € / year in cleaning costs**
- 975 € / year in calibration costs by extending the calibration interval form 1 × weekly to 1 × monthly

Amortization: after about nine months

* Consisting of a JUMO retractable assembly made of PVDF, JUMO AQUIS 500 pH, JUMO tecLine 201020, cleaning valves and control unit

** Hourly rate: 50 € / h, cleaning: 0.5 h daily, calibration: 0.5 h weekly

The advantages in a nutshell

Fast amortization of the measuring point:

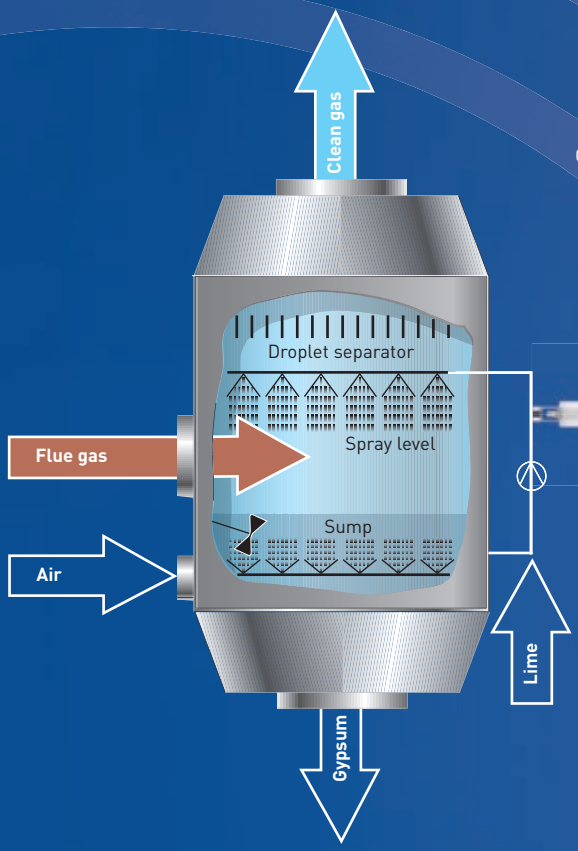
- Reduced maintenance costs and consumable material
- Extended service life for the pH sensors

Maximum process reliability:

- JUMO retractable assembly with safety lock for use when the sensor is removed and integrated positional feedback
- JUMO AQUIS 500 pH transmitter / controller with integrated electrode monitoring

High availability:

- Avoid unscheduled plant stoppages
- Reduce downtimes due to manual maintenance



JUMO AQUIS 500 pH
transmitter / controller for pH value, redox voltage, NH_3 (ammonia) concentration and temperature

Type 202560

Cleaning solution

pH

Washing contact

Pneumatic system

JUMO pneumatic retractable assembly

Type 202823

Control unit

Outlet

JUMO pneumatic retractable assembly 202823 – the "entry point" to the process

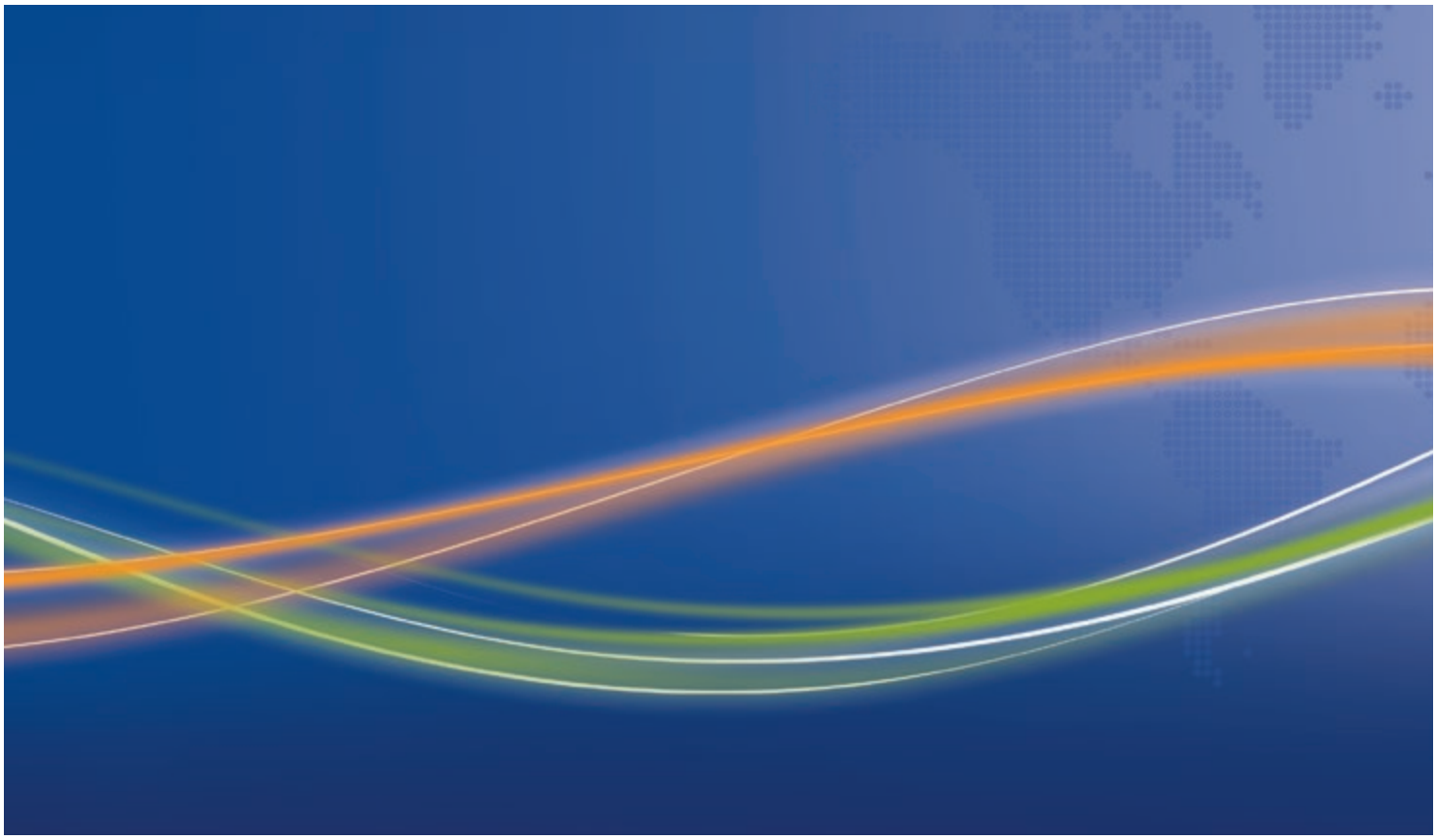
- Stroke of just 36 mm causes slight dynamic loading on the sealing elements
- PTFE scraper
- Control unit monitors and controls the measurement and cleaning cycles of the retractable assembly
- Preconfigured cleaning sequence with precleaning and postcleaning function, proven effective in practical applications
- Sealing water function

JUMO AQUIS 500 pH transmitter – as a stand-alone unit or in a team

- With integrated washing contact to trigger the control unit
- Graphic display with backlighting, plain text operation
- Surface-mounted case, protection type IP 67
- Complete controller function (for dosing acids and bases, etc.)

JUMO tecLine pH electrode 201020 – the process electrode for adhering media containing solid particles

- Proven low-maintenance combination electrode with solidified polymer gel and perforated diaphragm
- With optional Pt 100 temperature sensor
- 225 mm length for use in JUMO retractable assembly 202823



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