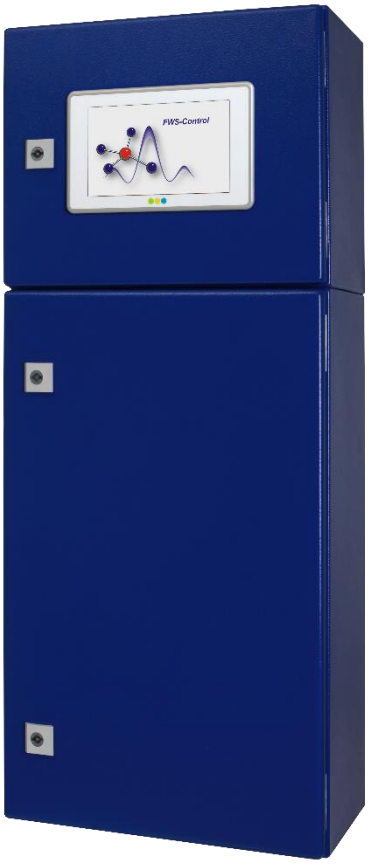
OFS Online Fluid Sensoric GmbH

Gesellschaft für analytische und meßtechnische Systeme

FWS-Control

- sustainable energy and cost savings for steam and feed water boilers -

FWS-Control provides an efficient way to save energy and costs. On individual systems, a savings potential of up to 8% of the operating costs of a steam boiler system is demonstrably possible. Irrespective of this, FWS-Control offers an efficiency method within the scope of the energy management system according to ISO 50001.



The entire boiler waters are analyzed and optimized. Thanks to continuous monitoring, FWS-Control can react very dynamically to load fluctuations and work very efficiently. Chemicals are only dosed according to qualitative requirements and not according to quantitative specifications. Detected oxygen-free space allows a saving of previous losses of the vaporized steam, under certain conditions up to 80% of the total vapor losses.

To prevent deposits and/or corrosion in boilers, conditioning agents are added. Due to the fully automatic, constant measurement and monitoring of the feed water, instead of a rigid quantity, a quality-related needs-based dosage of the conditioning agents takes place.

This leads to a significant reduction in the used chemicals, with up to 60% savings achieved. The consequence is that a higher thickening is achieved in the steam boiler. This entails a reduction in energy losses and quantities of blowdown.

Divided into the three modular sensor units conductivity, pH value and optical oxygen monitoring, it is possible with the FWS-Control to monitor the specified analytical threshold values of the feed water and to continuously regulate the dosing control of alkalization and residual oxygen binding even with changes in the boiler operation. Attention is paid to optimum use of chemicals and an increased thickening factor as the analytical efficiency of boiler operation.

The measured values of pH value, conductivity and residual oxygen content as well as the process values thickening factor, dosage and closing times for the vapor valve and others are stored with a time stamp in an electronic logbook and can be transferred via a data stick to an external PC and evaluated.

Measured values and process data are visualized in the display and the dosing pumps are activated as required and necessary. Optionally, FWS-Control also offers the option of networking with higher-level control centers as well as remote transmission and SMS service alarming. Thanks to the latter, prioritized errors are transmitted to selected persons in charge.

An automatic function check is used to monitor the functionality and to trigger an alarm if errors are detected. This also applies to the connected dosing stations and dosing pumps. Service requests are signaled on the display and managed and processed analogously to the process values.

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TÜV PROFI CERT ISO 9001 73 100 1248

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TECHNICAL DATA

Dimension of case:	600 x 980 x 220 mm (W x H x D), wall mounting
Weight:	ca. 35 kg
Surrounding temperature:	5 °C ... 50 °C
Relative humidity:	20 % ... 80 %
Cooling water connection:	shut-off branch ½“ internal thread
Cooling medium:	pressurized supplemental water, 1…10 bar, 5...20 °C
Hot and feed water connection:	shut-off branch ¼“ internal thread with upstream hot water magnetic filter 100µm
Quality hot and feed water:	pressure afflicted, max. 40 bar, sediment-free
Drainage:	pressure-free, PA-pipes OD 15 und OD 8 mm

OPERATING DATA

pH measuring range:	6 … 13 pH (temperature compensated)
Oxygen measuring range:	0,001 mg/l … oxygen saturation (temperature compensated)
Conductivity measuring range:	10…10.000 µS/cm (temperature compensated)
Measuring cycles:	continuously depending on the boiler release
Dosing cycles:	depending on threshold values (pH, conductivity, oxygen) as well as dosing times and boiler release
Dosing chemicals:	sodium sulfite, caustic soda, sodium triphosphate (under conditions ammonia, amines)
Sensor control:	automatically
Operating time sensors:	about 6...12 months, no guarantee
Signalizing:	collective alarm dosing stations and sensor service
Control:	vapor valve

ELECTRICAL CONNECTIONS

Power supply:	power supply unit 230 Volt, 50 Hz (protection class: I)
Operating voltage:	about 20 Watt
Alarm contacts:	potential-free changeover contact, max. 230 Volt, 10 A
Dosing pumps:	active current loop 4..20 mA, max. 500 Ohm (oxygen binders & alkalization)
Collective fault dosing pumps:	potential-free input
Boiler or feed water operation:	query make or break contact, potential-free
Vapor valve:	vapor valve control potential-free changeover contact max. 230 Volt, 10 A, power-off open
Optional:	connection to higher-level control centers
Optional:	remote maintenance with mobile alerting option
Optional:	condensate monitoring

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