STEAM BOILER WATER DEAERATION

OXYSTEAM

Precisely Control Vent Steam Using the O_2 Content

OXYSTEAM uses OXYTRANS TR to measure the stripped O_2 content of the steam-gas phase in the dome headspace of a thermal feedwater deaerator. The measured value is used for precise control of the vent steam valve.



Steam-Gas Phase
O_2 measurement directly in the dome headspace of the deaerator.

Valve Control
Vent steam valve opening time matched to the measured value.

Steam Savings
Steam losses can be reduced by up to 95 %.

Measuring Principle

During thermal deaeration, dissolved oxygen is stripped out using steam. OXYTRANS TR measures the O_2 content of the steam-gas phase. The control system opens the vent valve only for as long as required for deaeration.

Applications

- Thermal Feedwater Deaerator
- Steam-Gas Phase
- Dome Headspace
- Vent Steam
- Steam Boiler
- Corrosion Protection
- Vent Valve
- Steam Savings

Calculation example: A boiler capacity of 10 t/h, steam loss of 0,4 % and operation for 8.760 h/year result in steam losses of 350 t; savings are assumed to be 330 t or 13.000 EUR/year at 40 EUR/t.

Technical Data

Technical O_2 measurement data for the version used in the OXYSTEAM application.

PARAMETER	OXYSTEAM
Measuring Ranges, Liquid Phase	I) 1 ppb - 2 ppm II) 30 ppb - 35 ppm
Accuracies, Liquid Phase	I) ± 1 ppb II) ± 30 ppb
Measuring Ranges, Gas Phase	I) 0 - 4,2 % O_2 II) 0 - 50 % O_2
Accuracies, Gas Phase	I) ± 0,002 % O_2 II) ± 0,03 % O_2
Response Time	t90 ≤ 10 s
Operating Pressure	max. 12 bar
Operating Temperature	Standard -5 to +55 °C (Pt100) optional: max. +98 °C +98 to +110 °C: reduced accuracy
Material	1.4404 / AISI 316L, silicone (FDA), PTFE (FDA)
Input	1 x analog (4 - 20 mA) & 3 x digital (24 VDC)
Output / Fieldbus	2 x analog (4 - 20 mA) & 3 x digital (24 VDC) optional: PROFIBUS DP & PROFINET
Enclosure Rating / Supply	IP65 / 24 VDC

Optical Technology

No replacement of electrolyte or membrane.

Short Response Time

t90 ≤ 10 s and high long-term stability.

High Temperatures

Suitable for applications at high temperatures.

Design & Integration

We support you with the project-specific selection and integration of the **OXYSTEAM** - from measuring range and installation position to process connection and interfaces.

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