OPSIS®

opsis.se

Continuous Emissions Monitoring
and Process Control

H_2S Monitoring

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H_2S Monitoring

The measurement of hydrogen sulfide (H_2S) can be a challenge due to chemical reactions and contamination. The installed systems will often require a lot of maintenance, still not giving reliable results.

The OPSIS DOAS system is different, no scrubber is needed and it works fine in an environment with high levels of SO_2.

OPSIS offers two solutions for monitoring hydrogen sulfide. The cross-stack solution is designed for measuring high concentrations of H_2S, while the hot wet extractive solution is more suitable for measuring low concentrations.

Besides the measurements of hydrogen sulfide, the same analyser system can measure a large number of other gases required by legislation, such as NO_X, SO_2, CO, CO_2, NH_3, H_2O, HF, and HCl.

RETURN OF INVESTMENT

The cost of investing in an OPSIS system is small compared to the amount of money that is spent on maintaining old and complex extractive systems.

The OPSIS system has low cost of ownership based on few moving parts, long intervals between calibrations, easy operation, and low energy consumption.

TEST AND APPROVALS

The OPSIS system has been tested and approved by a number of internationally recognized institutes and authorities. The system is approved according to EN 15267. The OPSIS system meets the requirements given by U.S. EPA and China EPA.

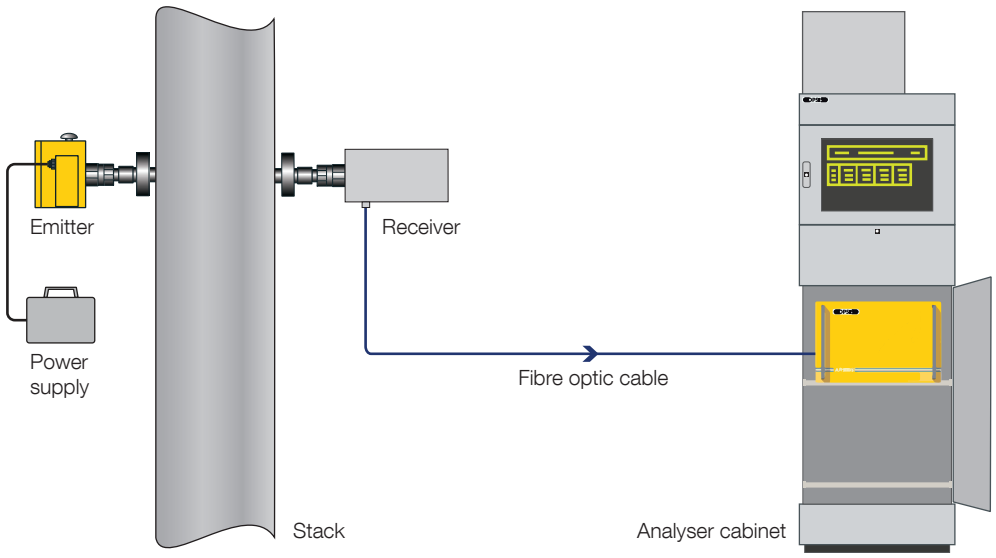
OPSIS PRODUCT PORTFOLIO

OPSIS has a full product portfolio for measurements of gases in a range of applications. It includes complete CEM systems with reporting, process analysers for raw gas measurements, TDL analysers for NH_3, HCl, and O_2, oxygen analysers, and Hg analysers.

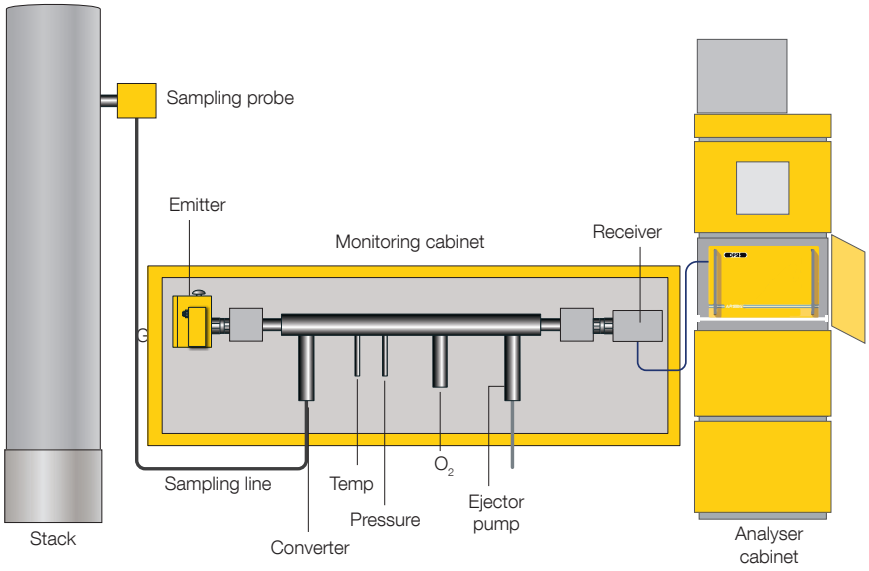
For further information, please visit www.opsis.se.

QAL 1 CERTIFICATION:
BEST PERFORMANCE
LONGEST CALIBRATION INTERVAL

SYSTEM OVERVIEW – CROSS-STACK H_2S SYSTEM



SYSTEM OVERVIEW – HOT WET EXTRACTIVE H_2S SYSTEM



PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Max. measurement range (1 m path)[1]	Lowest measurement range according to EN15267	Min. detectable quantities (monitoring path 1 m)
UV/IR DOAS Analyser Models AR600 / AR602Z / AR602Z/Hg / AR602Z/N / AR602Z/NHg / AR620			
H_2S	0–1000 mg/m³[7]	0–20 mg/m³[5]	0.5 mg/m³
Hg^0	0–1000 µg/m³	0–45 µg/m³	0.5 µg/m³
THg	0–1000 µg/m³	0–45 µg/m³	0.5 µg/m³
NO[2]	0–2000 mg/m³	0–150 mg/m³	0.5 mg/m³
NO_2	0-100% Vol.	0–20 mg/m³	0.5 mg/m³
SO_2	0-100% Vol.	0–75 mg/m³	0.5 mg/m³
NH_3[3]	0–1000 mg/m³	0–10 mg/m³	0.5 mg/m³
H_2O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HCl	0–10000 mg/m³	0–1000 mg/m³[5]	10 mg/m³[4]
HF	0–1000 mg/m³	0–100 mg/m³[5]	5 mg/m³
CO_2	0–100% Vol.	0–30% Vol.	0.5% Vol.
Benzene	0–1000 mg/m³	0–20 mg/m³[5]	0.5 mg/m³
FTIR DOAS Analyser Models AR650 / AR650/N / AR650/NHF			
H_2S	0–100% Vol.[6]	0–10000 mg/m³[5]	500 mg/m³
HCl	0–100% Vol.	0–15 mg/m³	0.5 mg/m³
CO	0–100% Vol.	0–75 mg/m³	2 mg/m³
H_2O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HF	0-100% Vol.	0–1.5 mg/m³	0.1 mg/m³
NH_3	0–100% Vol.	0–100 mg/m³[5]	2 mg/m³
N_2O	0–100% Vol.	0–500 mg/m³	5 mg/m³
CH_4	0–100% Vol.	0–20 mg/m³	0.5 mg/m³
CO_2	0–100% Vol.	0–20% Vol.	0.1% Vol.
LD500 Laser Diode Gas Analyser			
H_2S	0–100% Vol.[6]	0–10000 mg/m³[5]	500 mg/m³
HCl	0–100% Vol.	0–15 mg/m³[5]	0.5 mg/m³
CO	0–100% Vol.	0–5% Vol.[5]	0.1% Vol.
H_2O	0–100% Vol.	0–30% Vol.[5]	0.1% Vol.
HF	0–100% Vol.	0–1.5 mg/m³[5]	0.1 mg/m³
NH_3	0–100% Vol.	0–10 mg/m³[5]	0.5 mg/m³
CO_2	0–100% Vol.	0–30% Vol.[5]	0.1% Vol.
O_2	0–21%	0–20% Vol.[5]	0.1% Vol.
Temperature	0–1400°C	—	5°C

Accuracy
Better than 2% of measured value or equal to the detection limit (whichever is greater).

Span drift
Less than 2% per year.
Please, refer to QAL1 documents.

Zero drift
Less than 2% of measurement range per year.
Please, refer to QAL1 documents.

Linearity error
Less than 1% of measurement range.

[1] This data refers to a light path of 1 m. For longer paths the maximum range is proportionally smaller. Products are available to create shorter paths in very wide stacks.
[2] Maximum SO_2 concentration 5 g/m³ × m.
[3] Maximum SO_2 concentration 500 mg/m³ × m.
[4] Monitoring path 5 m, measurement time 30 sec.
[5] Lowest measurement range.
[6] Cross-stack solution.
[7] Hot wet extractive solution.

- Recommended monitoring path length: 1 to 5 m.
- After wet scrubbers or when the particulate concentration is high, the monitoring path length may have to be reduced.
- Max. length of fibre optic cable: please refer to product sheet P9 and P16.
- Additional gases can be measured.

FACTORY TESTED SYSTEMS
WITH DELIVERY ON TIME.

H_2S Monitoring by OPSIS

Best performance according to QAL 1 certification

Longest calibration interval according to QAL 1 certification

Easy and reliable construction

Raw-gas and emissions monitoring with one system

Same system can monitor all other stack gases

Internationally approved

Thousands of systems installed worldwide

Serviced by highly skilled service network

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Please contact your OPSIS supplier to discuss your particular system requirements, including the compounds you wish to monitor. Separate product and other industrial application sheets are available. Specifications subject to change without notice.

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