

Internationally Approved
EN 15267 Certified



Continuous Emissions Monitoring
and Process Control

One System for All Gases – including Mercury

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Continuous Emissions Monitoring and Process Control

One System for All Gases – including Mercury

Operators of waste incinerators, cement plants, power plants and many other types of industries are often required to monitor pollutant emissions to ambient air. That calls for good and reliable, but also cost-effective, measurement systems.

Emissions monitoring can be a challenge due to hot, wet, and particulate-laden flue gases. Many types of monitoring systems require a lot of maintenance, and even in the best of hands they can still produce questionable results and be prone to failures. The total cost of ownership can become very high.

The OPSIS monitoring systems are different. They give the plant operators accurate gas analysis with a minimum of maintenance. A single system can measure the concentrations of a large number of gases, often required by legislation, such as NO_x, SO₂, CO, CO₂, NH₃, H₂O, HF, and HCl.

Some legislation also requires continuous emissions monitoring of total gaseous mercury, THg. This might be very difficult from a practical perspective due to potential chemical reactions and contaminations. However, the OPSIS systems can easily be configured to provide reliable concentration measurements also of THg, in parallel with all other gaseous pollutants.

RETURN ON INVESTMENT

The cost of investing in an OPSIS gas monitoring system is small compared to what can be spent on maintaining other types of systems. The OPSIS systems have low total cost of ownership based on few moving parts, long intervals between calibrations, ease of 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 meets the European directive for waste incinerators and is approved according to EN 15267. The OPSIS system meets the requirements given by U.S. EPA and China EPA among others.

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 NH₃, HCl, and O₂, oxygen analysers, and Hg analysers.

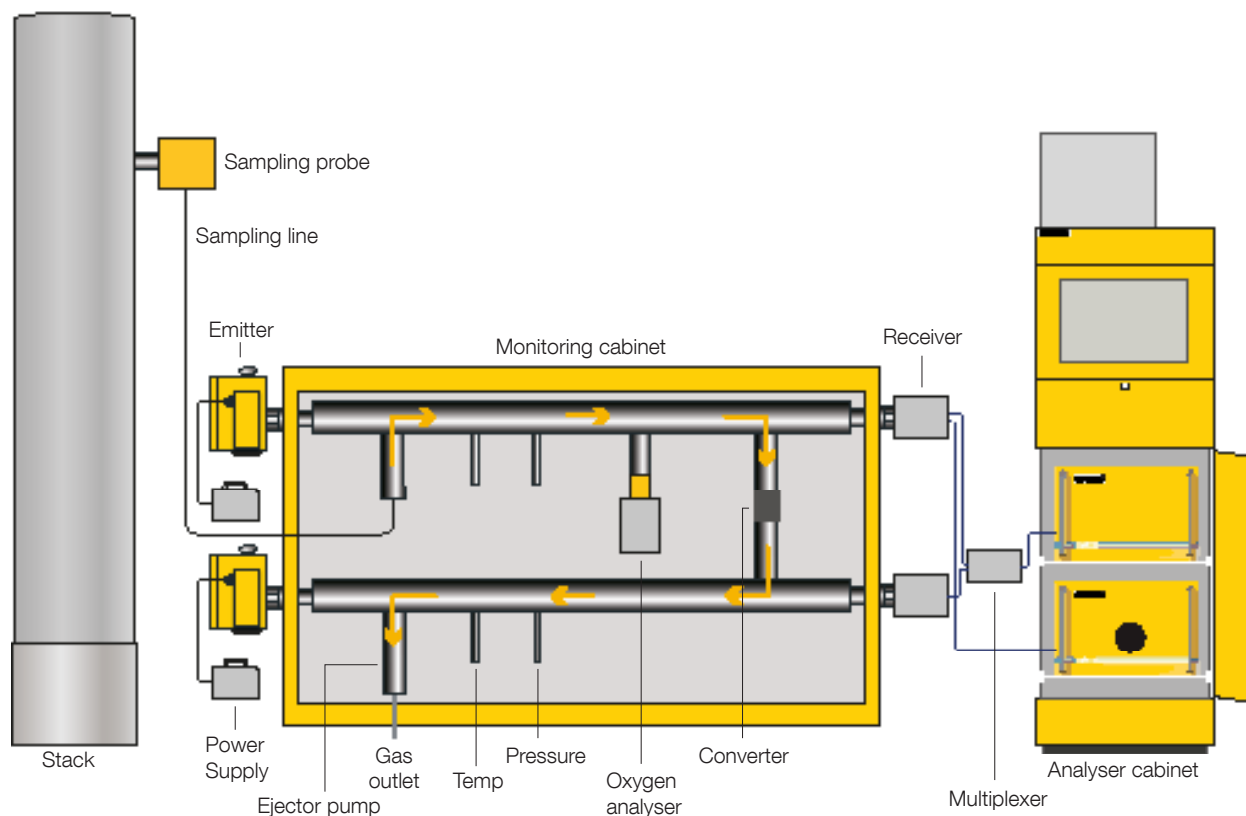
For further information, please visit www.opsis.se.

QAL 1 CERTIFICATION:

BEST PERFORMANCE

LONGEST CALIBRATION INTERVAL

SYSTEM OVERVIEW



PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Max. measurement range (1 m path) ⁽¹⁾	Lowest measurement range according to EN 15267	Min. detectable quantities (monitoring path 1 m, measurement time 5 sec.)
UV/IR DOAS Analyser Models AR600 / AR602Z / AR602Z/Hg / AR602Z/N / AR602Z/NHg / AR620			
Hg ⁰	0–1000 µg/m ³	0–45 µg/m ³	0.5 µg/m ³
THg	0–1000 µg/m ³	0–45 µg/m ³	0.5 µg/m ³
NO ⁽²⁾	0–2000 mg/m ³	0–150 mg/m ³	0.5 mg/m ³
NO ₂	0–100% Vol.	0–20 mg/m ³	0.5 mg/m ³
SO ₂	0–100% Vol.	0–75 mg/m ³	0.5 mg/m ³
NH ₃ ⁽³⁾	0–1000 mg/m ³	0–10 mg/m ³	0.5 mg/m ³
H ₂ O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HCl	0–10000 mg/m ³	0–1000 mg/m ³⁽⁵⁾	10 mg/m ³⁽⁴⁾
HF	0–1000 mg/m ³	0–100 mg/m ³⁽⁵⁾	5 mg/m ³
CO ₂	0–100% Vol.	0–30% Vol. ⁽⁵⁾	0.5% Vol.
Benzene	0–1000 mg/m ³	0–20 mg/m ³⁽⁵⁾	0.5 mg/m ³

FTIR DOAS Analyser Models AR650 / AR650/N / AR650/NHF

HCl	0–100% Vol.	0–15 mg/m ³	0.5 mg/m ³
CO	0–100% Vol.	0–75 mg/m ³	2 mg/m ³
H ₂ O	0–100% Vol.	0–30% Vol.	0.1% Vol.
HF	0–100% Vol.	0–1.5 mg/m ³	0.1 mg/m ³
NH ₃	0–100% Vol.	0–100 mg/m ³⁽⁵⁾	2 mg/m ³
N ₂ O	0–100% Vol.	0–500 mg/m ³	5 mg/m ³
CH ₄	0–100% Vol.	0–20 mg/m ³	0.5 mg/m ³
CO ₂	0–100% Vol.	0–20% Vol.	0.1% Vol.

LD500 Laser Diode Gas Analyser

HCl	0–100% Vol.	0–15 mg/m ³⁽⁵⁾	0.5 mg/m ³
CO	0–100% Vol.	0–5% Vol. ⁽⁵⁾	0.1% Vol.
H ₂ O	0–100% Vol.	0–30% Vol. ⁽⁵⁾	0.1% Vol.
HF	0–100% Vol.	0–1.5 mg/m ³⁽⁵⁾	0.1 mg/m ³
NH ₃	0–100% Vol.	0–10 mg/m ³⁽⁵⁾	0.5 mg/m ³
CO ₂	0–100 g/m ³	0–30% Vol. ⁽⁵⁾	0.1% Vol.
O ₂	0–21%	0–20% Vol. ⁽⁵⁾	0.1% Vol.
Temperature	0–1400 °C ⁽⁵⁾	—	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 SO₂ concentration 5 g/m³ × m.

⁽³⁾ Maximum SO₂ concentration 500 mg/m³ × m.

⁽⁴⁾ Monitoring path 5 m, measurement time 30 sec.

⁽⁵⁾ Lowest measurement range.

- 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 sheets P9 and P16.
- Additional gases can be measured.

Continuous Emissions Monitoring and Process Control by OPSIS

Single system can monitor all stack gases
Emissions monitoring of total mercury
Raw-gas monitoring of elementary mercury
Proven, reliable design
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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