OPSIS®

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Continuous Emissions Monitoring
and Process Control

Waste to Energy Plants

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Continuous Emissions Monitoring
and Process Control

Waste to Energy Plants

Process control and emission monitoring in a waste to energy plant can be a challenge. A large number of gaseous components need to be measured with high accuracy. Almost 100% uptime is required and the monitoring system needs to be easy to maintain and fast to calibrate.

The OPSIS system is different compared to other systems on the market and provides the waste to energy plant with an accurate analyser that will operate with a minimum of maintenance.

The OPSIS system is based on a non-contact DOAS/FTIR method, using an optical path that can operate across the duct. The optical light is transported in an optical fibre to the analyser and one analyser can operate several paths.

A single OPSIS system can measure all relevant gas components such as NO_x, SO_2, CO, CO_2, H_2O, HCl, HF, NH_3, CH_4, and Hg.

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

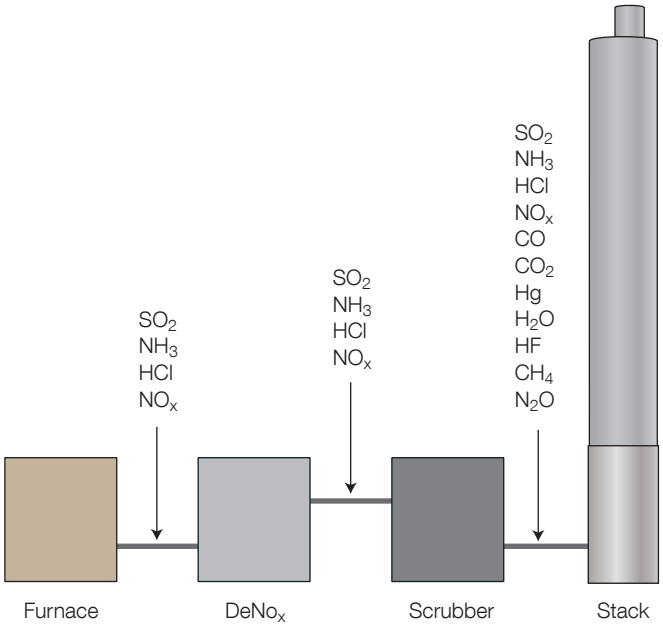
The OPSIS system has been tested and approved by a number of internationally recognized institutes and authorities. The system meets the European directive for waste and is approved by German TÜV and British MCERTS. Full details are available on request.

OPSIS PRODUCT PORTFOLIO

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

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

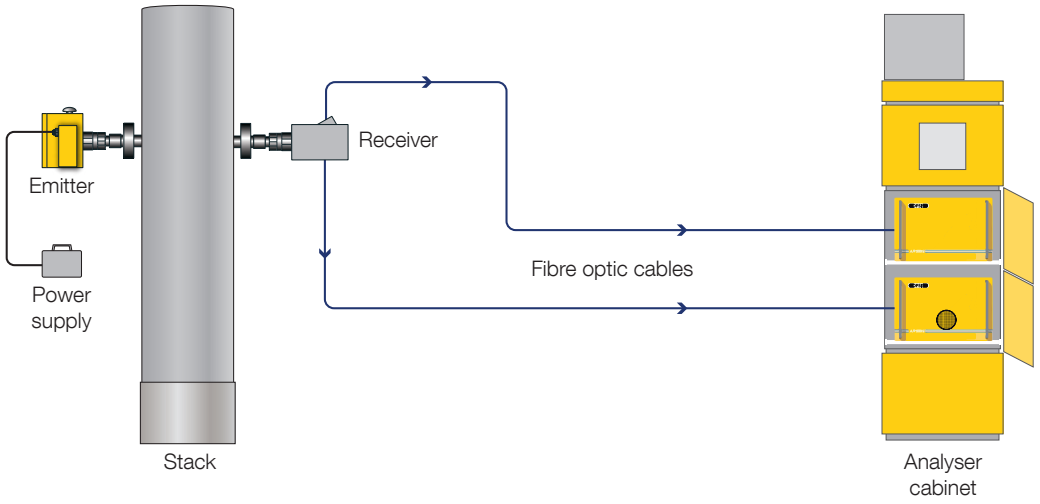
QAL 1 CERTIFICATION:
BEST PERFORMANCE
LONGEST CALIBRATION INTERVAL



The OPSIS monitoring system is an effective tool for controlling the different emissions and process control spots in a waste incinerator

SYSTEM OVERVIEW

An OPSIS system layout for emissions monitoring and process control in a waste incineration plant.



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 30 sec.)
UV/IR DOAS Analyser Models AR600 / AR602Z / AR602Z/Hg / AR602Z/N / AR602Z/NHg / AR620			
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
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
H_2O	0-100% Vol.	0-30% Vol.	0.1% Vol.
Benzene	0-1000 mg/m³	0-20 mg/m³[5]	0.5 mg/m³
Br_2	0–10000 mg/m³	0-200 mg/m³[5]	5 mg/m³
I_2	0–10000 mg/m³	0-200 mg/m³[5]	5 mg/m³
FTIR DOAS Analyser Models AR650 / AR650/N			
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[4]
CH_4	0-100% Vol.	0-20 mg/m³	0.5 mg/m³
CO_2	0-100% Vol.	0-20% Vol.	0.1% Vol.
HCN	0-100% Vol.	0-100 mg/m³[5]	3 mg/m³
LD500 Laser Diode Gas Analyser			
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% Vol.	0-20% Vol.[5]	0.1% Vol.
CH_4	0-100% Vol.	0-20 mg/m³[5]	0.5 mg/m³
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 x m.
[3] Maximum SO_2 concentration: 500 mg/m³ x m.
[4] Detection limit of 1 mg/m³ is optional with hardware upgrade.
[5] Lowest measurement range.

- Recommended monitoring path length: 1 to 5 m.
- After wet scrubbers or when particulate concentration averaged over 1 m is higher than 5 g/m³, the monitoring path length may have to be reduced.
- Max. length of fibre optic cable: please refer to product sheet P9 and P16.

FACTORY TESTED SYSTEMS
WITH DELIVERY ON TIME.

Continuous Emissions Monitoring and Process Control by OPSIS

One system for all components including Hg

Combines the benefits of UV/FTIR DOAS and TDL technology

Best performance according to QAL 1 certification

Longest calibration interval according to QAL 1 certification

Automatic QAL 3 check as option

No sampling required, non-contact measurement system

Operates with a minimum of maintenance

Low energy consumption

Gas calibration only once per year

Internationally approved

Thousands of systems installed worldwide

Serviced by highly skilled service network

UK & Ireland Distributor

Enviro
Technology Services Ltd
part of CuraTerrae

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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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