

Certified by DNV, Lloyd's Register, RINA, CCS, and Bureau Veritas



Continuous Emissions Monitoring
and Process Control

SO₂ Scrubber Control

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Continuous Emissions Monitoring and Process Control

SO₂ Scrubber Control

MONITORING OF SO₂ AND CO₂

Process control of an SO₂ scrubber on a ship is a challenge due to wet and corrosive gases. In such environment, extractive gas sampling systems require high levels of maintenance in order to operate correctly. OPSIS M800 monitoring system solves this by using an optical, non-contact, cross-duct technique.

A light beam is sent across the duct or stack to be measured, and the captured light is sent through an optical fibre cable to an analyser. The analyser measures SO₂ and CO₂ concentrations using UV and FTIR absorption, approved reference methods.

The sulfur content in the bunker oil is measured based on the SO₂/CO₂ ratio in ppm/Vol.%, where the ratio has to stay below 4.3, which is equivalent to 0.1% sulfur content in the bunker oil.

One analyser can be connected to several measurement paths using an optical multiplexer, making a cost-effective solution for up to 10 monitoring points.



An OPSIS ship installation

DATA MANAGEMENT FEATURES

- All data stored in analysers,
- Automatic backup to the web logger,
- Automatic transfer of data to FTP site,
- Access to system and remote control via the Internet,
- Monitoring of all system and control parameters,
- Automatic alarms, and
- Reporting software as an option.

RETURN ON INVESTMENT

The investment for an OPSIS M800 system is low compared to the operating/maintenance cost for extractive systems. With the multipath capability, one single OPSIS analyser can monitor all scrubber systems on a ship, thereby minimizing the investment.

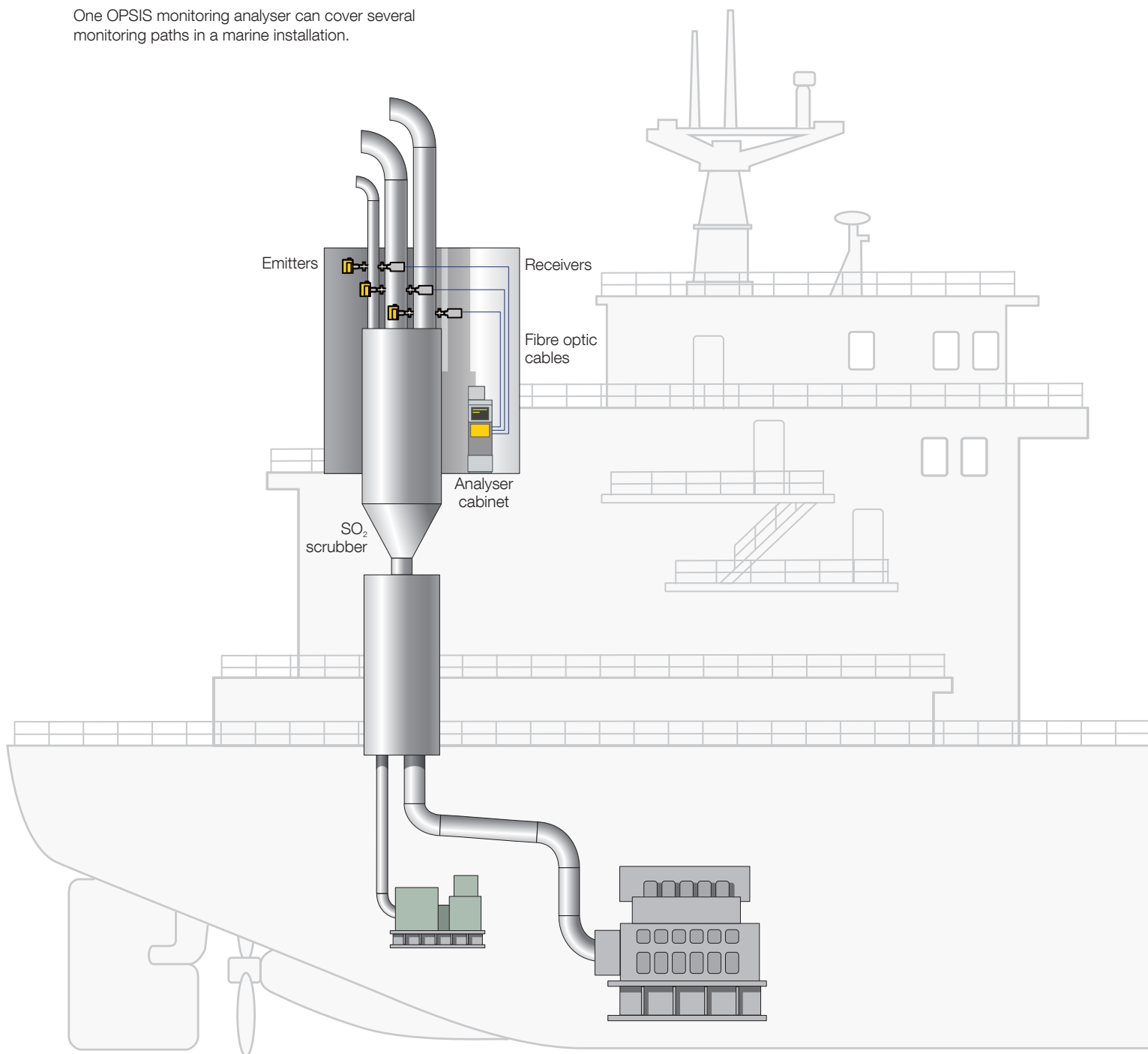
TESTS AND APPROVALS

OPIS M800 system is tested and type approved by DNV, Bureau Veritas, Lloyd's Register, RINA, China Classification Society (CSS), and Bureau Veritas, for installation on Ships/Sea vessels. OPSIS UV/FTIR systems are also approved for land installations by organisations such as TÜV, MCERTS, and U.S. EPA.

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

SYSTEM OVERVIEW

One OPSIS monitoring analyser can cover several monitoring paths in a marine installation.



PERFORMANCE DATA

(typical data which may vary depending on application)

Compound	Max. measurement range	Lowest measurement range according to EN15267	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 / AR620M			
SO ₂	0–5000 ppm	0–25 ppm	0.2 ppm
CO ₂	0–100% Vol.	0–10% Vol.	0.2% Vol.

- Max. length of fibre optic cable: please refer to product sheet P9.

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.

Continuous Emissions Monitoring and Process Control by OPSIS

Measures SO₂ and CO₂ using UV and IR reference methods

No sampling required, non-contact system

Operates with a minimum of maintenance

Gas calibration only once per year

Easily calibrated using closed calibration cells

One system for all scrubbers on a ship

Certified by DNV, Bureau Veritas, Lloyd's Register, RINA, CSS,
and Bureau Veritas

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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