Brochure | Danfoss IXA

Advanced Continuous Emissions Monitoring System (CEMS) for Ammonia-fueled marine engines

MES 1001 Ammonia - NH_3, NO_x Analyzer designed for NH_3-ready engines

Innovating for the fuel transition in global shipping

As ammonia emerges as a promising marine fuel, Ammonia (NH_3) emission remains a key challenge. This is the release of unburned ammonia into the exhaust - a safety concern for crew, a pollutant for the environment, and a compliance issue under evolving regulations.

The MES 1001 Ammonia is an innovative NH_3, NO_x CEMS for low-pressure (post turbocharger) installation that continuously monitors and reports NH_3 and NO_x in real-time. This enables feedback and/or feed-forward control of SCR and engine operation and ensures documentation of compliance with international regulations.

MES 1001 Ammonia
Measurement ranges

NH_3	0-1000 ppm
NO_X	0-2000 ppm *

MES 1001 and MES 1001 MARPOL
Measurement ranges

NH_3	0-100 ppm
NO_X	0-2000 ppm *
SO_2	0-1000 ppm

* The analyzer can display the NO_x in the range 0-2000 ppm, which is calculated as NO + NO_2. Please note that the maximum level NO_x is defined by the maximum levels for NO and NO_2 which are 1500 ppm and 500 ppm respectively.

Reliable and compliant
CEMS solution for measuring ammonia at high concentrations

Based on years of experience developing Continuous Emissions Monitoring Systems (CEMS) for NH_3, SO_2, CO_2, and NO_x, our In-Situ technology is designed to accurately monitor, measure, and manage emissions on ammonia-ready vessels.

The MES 1001 Ammonia CEMS solution precisely monitors, measures, and reports NH_3 and NO_x emissions, enabling shipowners to confidently transition to Ammonia as a fuel.

NH_3 Engines – NH_3, NO_X

MES 1001 Ammonia represents a significant advancement in sensor technology for optimizing Ammonia-ready engines and SCR systems and ensuring crew safety.

NH_3 engines require higher measuring ranges than standard fuel engines. MES 1001 Ammonia offers an extended range of 1000 ppm NH_3 .

For installation points with low NH_3 emissions, i.e. after SCR, the MES 1001 and MES 1001 MARPOL with NH_3 range of 100 ppm can be a suitable option, for example for documentation of compliance.

MES 1001 Ammonia NH_3, NO_x Analyzer

MES 1001 Ammonia NH_3, NO_x Analyzer

The MES 1001 Ammonia is a future proof CEMS solution that embodies our dedication to providing leading-edge emission monitoring solutions, enabling the future of sustainable shipping.

Key benefits

01

Fast response time

The In-Situ CEMS ensures real-time measurements, which are not affected by the adhesive nature of NH_3 known to give slow response times for extractive systems.

02

High accuracy and drift-free measurement

The UV DOAS measurement technology combined with the Danfoss IXA patented probe system with automatic zero-calibration ensures high measurement accuracy and prevents zero- and span-drift.

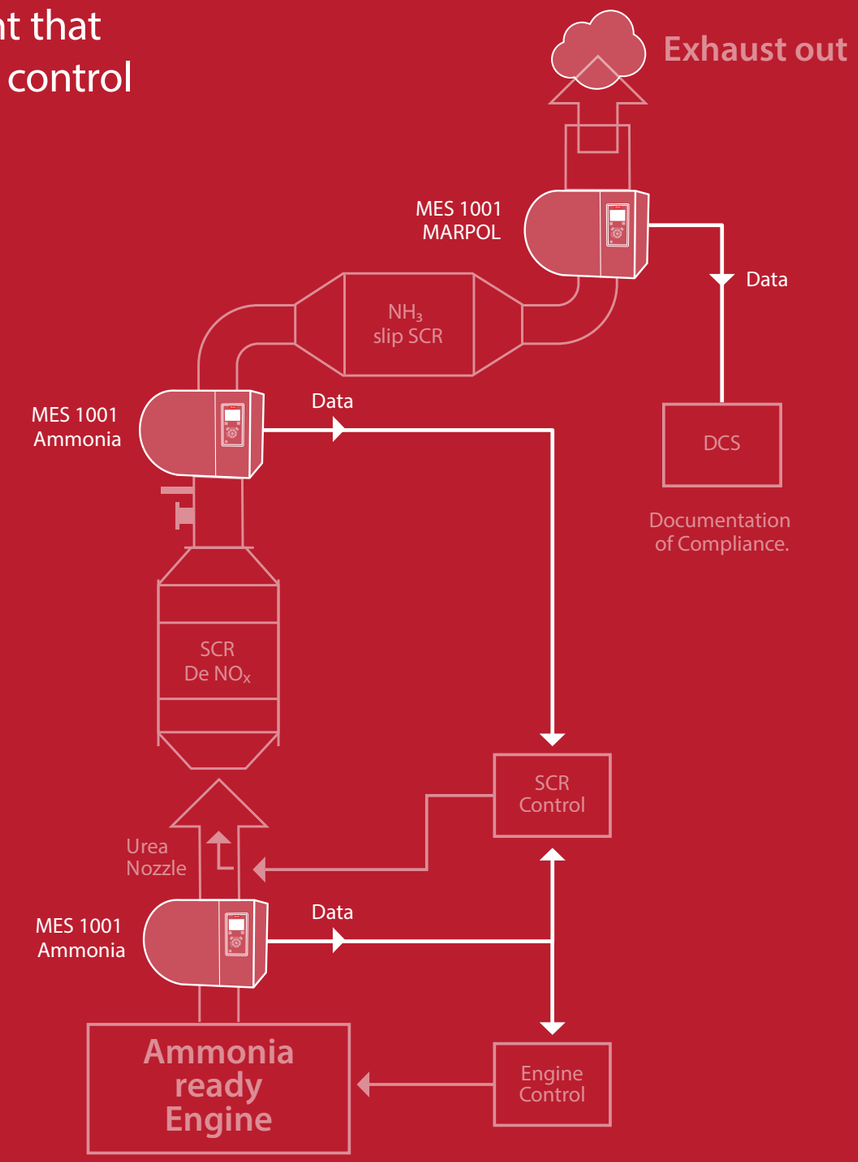
03

Easy maintenance and installation

Single-unit setup with minimal configuration requiring only power, air, and data. Simple maintenance performed by crew; replacement of air filters and lamps, and cleaning of optics.

Dimensions	W922 x H375 x D284 (mm)
Weight	33 kg
Mounting location	Low pressure side of engine exhaust system (after turbocharger)

Measurement that keeps you in control



The MES 1001 Ammonia is ideal for monitoring NH_3 and NO_x from Ammonia-fueled engines.

The analyzer can monitor NH_3 and NO_x before and after SCR units on the low-pressure side of the exhaust system (i.e., after the turbocharger).

The real-time signals can be used in feedback and/or feed-forward control strategies. The fast response time of the analyzer makes it suitable for fast and optimum control of engine and SCR operation.

Innovation for the fuel transition in global shipping

Based on years of experience and development of advanced CEMS technology, the MES 1001 Ammonia leverages our best-in-class solution to provide accurate and reliable ammonia monitoring, a requirement for vessels utilizing ammonia as a fuel. This solution benefits from the proven performance and robustness of our existing MES 1001 CEMS, ensuring seamless integration and reliable operation onboard commercial vessels.

The MES 1001 Ammonia is a future proof CEMS solution that embodies our dedication to providing leading-edge emission monitoring solutions, enabling the future of sustainable shipping.

With unmatched precision our advanced CEMS solutions provide the precise data you need to confidently transition to ammonia, ensuring:

Safety

Protect your crew and vessel with real-time ammonia monitoring.

Control

The real-time signal allows fast and optimum control of engine and SCR operation.

Compliance

Meet evolving regulations with accurate emission data.

Sustainability

Demonstrate your commitment to a greener future.

One solution provider of emission monitoring

Danfoss IXA is one solution provider of emission monitoring.

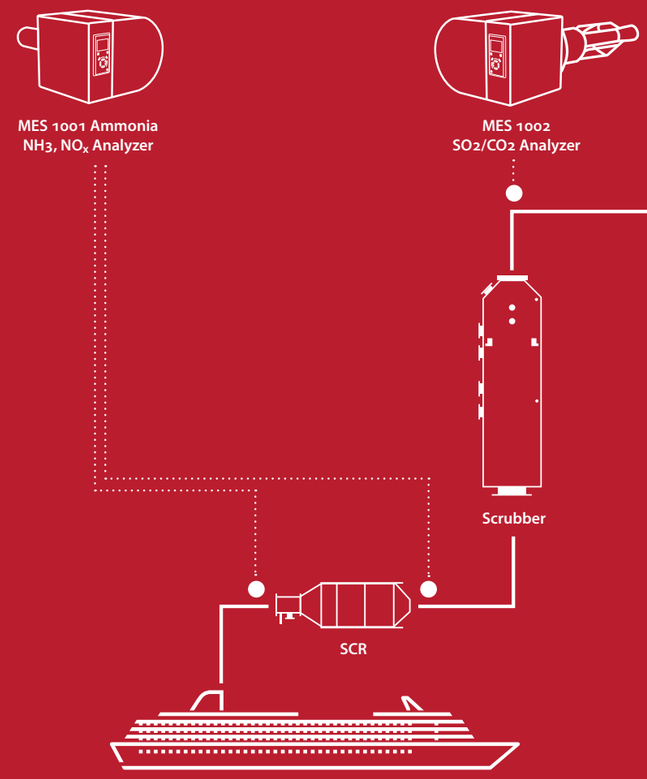
This covers monitoring and gathering of all emission data to be used for compliance, control, documentation, and optimization of processes in various applications throughout the engine room. This is done through platforms provided by the Danfoss IXA product portfolio.

All Danfoss IXA products together provide you with the best solution for emission monitoring that is easy to install, operate and maintain.

Danfoss IXA is world class provider of emission monitoring solutions.

← Scan QR code

Discover more about MES 1001 Ammonia on our website.



MES 1001 Ammonia Measurement ranges

NH_3	0-1000 ppm
NO_X	0-2000 ppm *

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Explore our solutions
danfoss-ixa.com

One solution provider of emission monitoring in the maritime industry

Danfoss IXA A/S, part of the Danfoss Group, is a leading player in certified marine emission monitoring solutions. We develop innovative analyzers and systems that precisely and continuously measure climate parameters and environmentally harmful gases, providing documentation of regulatory compliance and essential input for energy optimization.

MES 1001
NO_x, SO_2 and NH_3 analyzer

MES 1001 MARPOL
NO_x, SO_2 and NH_3 analyzer

MES 1001 Ammonia
NH_3, NO_x analyzer

MES 1002
SO_2, CO_2 analyzer

Engineering a more sustainable shipping industry

Maritime expertise across divisions

To serve the marine industry in the best possible way, several Danfoss divisions bring a particular range of technical know-how and benefits on board. On their own, each division is at the forefront of its field with industry-leading insight and innovation. Working together, the Danfoss divisions form a comprehensive array of components that help major ships around the world ashore safely and on-time.

Maritime Products with High Standards

Danfoss IXA's products are designed for the maritime environment and comply with industry standards. Thorough testing and third-party approvals ensure high technical standards.

Further information available on website: danfoss-ixa.com

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