

Innovative marine emission monitoring with intelligent sensor technology

MES1001 is an innovative NO_x, SO₂ and NH₃ analyzer



Marine regulatory compliance calls for **reliable and compliant solutions**



Best-in-class solution
for safe performance

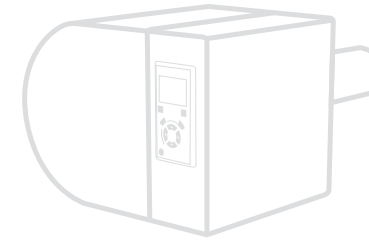
At Danfoss IXA we work together with all relevant class societies. This ensures that our products live up to the leading standards in the industry as well as ensuring the design quality.

The increasing global focus on the environment and energy efficiency are the key drivers for our NO_x, SO₂ and NH₃ analyzer, MES 1001.

The analyzer has been developed with the purpose of enabling the maritime industry to create transparency of their emissions and turn this information into competitive advantages, through favorable total cost of ownership.



Comply with environmental regulations



In an effort to reduce NO_x emissions further, the Tier III requirements have been established for vessels keel laid after 2016 by The International Maritime Organization (IMO).

The Tier III requirements have been established for vessels operating in Emission Control Areas (ECA). More engine manufacturers and vessel owners are looking towards Selective Catalytic Reduction (SCR) as a means to reduce NO_x emissions.

The Danfoss IXA NO_x, SO₂ and NH₃ sensor, MES 1001, helps you ensure SCR performance and enables optimization of the SCR process.



Selective Catalytic Reduction

The traditional approach to controlling Selective Catalytic Reduction (SCR) is by means of the engine load signal, where the amount of urea injected into the SCR is controlled as a function of the load.

An alternative and cost-efficient approach is to install a marine emission analyzer after the SCR and feed back the NO_x signal to the urea dosing controller to control the dosing of urea more accurately and obtain a better transient performance as the regulation is based on the exhaust out of the SCR. In addition, the analyzer can measure an ammonia slip and thereby issue a warning, which will prevent damage to equipment further down the stack.

Danfoss IXA specializes in emission monitoring solutions that provide fast and accurate measurements, which is vital in ensuring optimum use of the SCR.

MES 1001
NO_x, SO₂ and
NH₃ analyzer

Key benefits

01

High accuracy and
fast response time

Advanced sensor technology ensures accurate and reliable performance, reducing downtime and replacement costs. The In-Situ CEMS ensures real-time emission measurements.

02

Automatic reference
calibration

Preventing zero- and span-drift with Danfoss IXA patented probe system.

03

Easy installation
and maintenance

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.

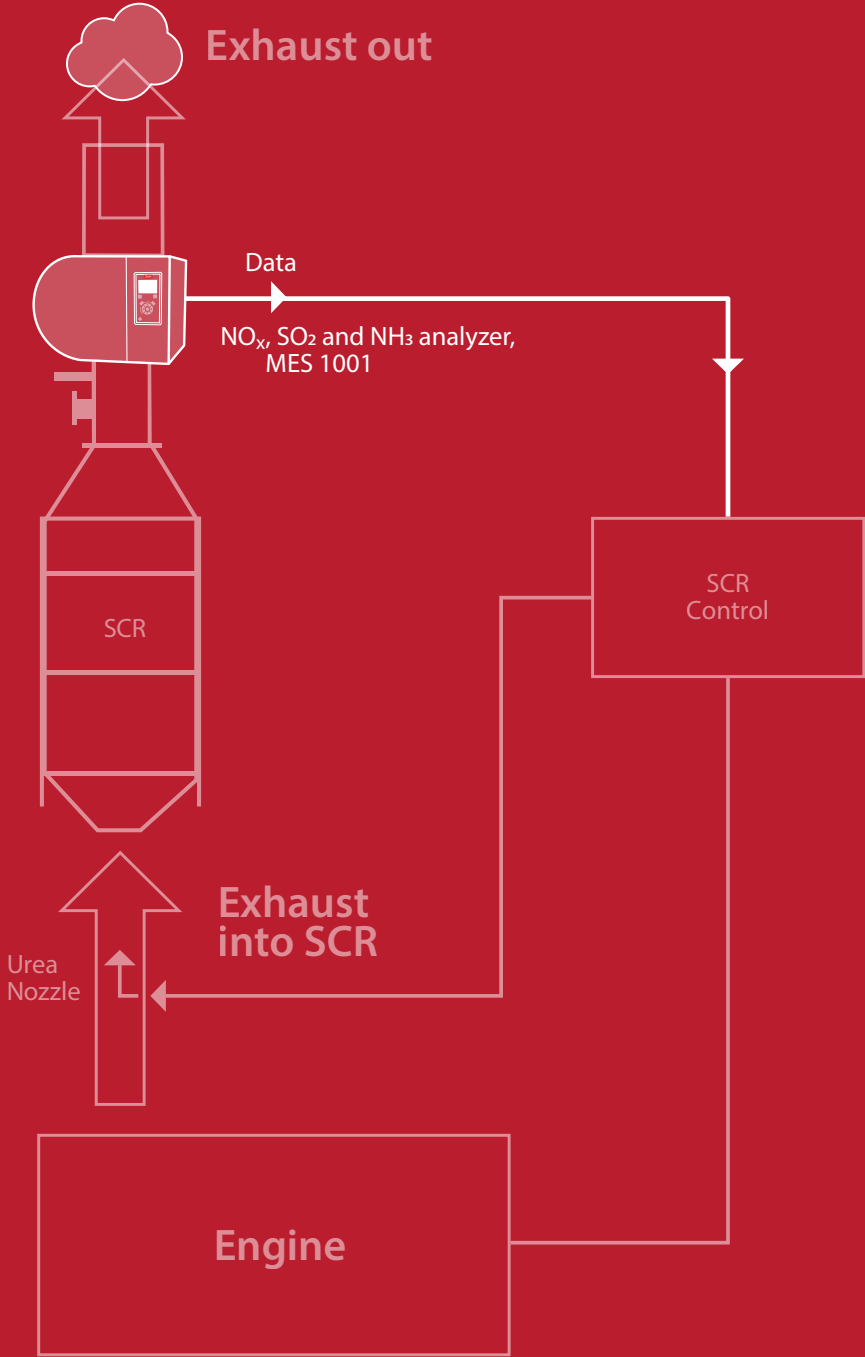


Dimensions	W922 x H375 x D284 (mm)
Weight	33 kg
Mounting location	Low pressure side of engine exhaust system

MES 1001 NO_x, SO₂ and NH₃ analyzer

MES 1001 measures NO_x, SO₂ and NH₃ gases directly in the exhaust pipe withstanding temperatures up to 500°C. The analyzer can send data updates every second and is self-calibrating – this means almost no maintenance and no special training. It is easy to install, requiring only pressurized air, data cable and power.

Measurement that
keeps you in control



The MES 1001 is ideal for monitoring NO_x and NH₃ in maritime SCR applications.

The analyzer can monitor NO_x emissions in open-loop SCR systems as well as in closed-loop SCR systems. In the latter case, the fast response time of the analyzer makes it suitable for feedback of the NO_x signal to the SCR control unit for fast and optimum dosing of urea.

With the ever-increasing number of SCR systems being installed on vessels worldwide to comply with the Tier III regulation, the monitoring of the ammonia becomes more and more important. An unmonitored ammonia slip is not only damaging the environment, it can also over time damage the exhaust system of the vessel with costly repairs as consequence.

Last but not least, the ammonia slip is money out the exhaust stack as the dosed urea is not utilized in the optimum way. The MES 1001 operates in both high and low sulfur applications.

Reliable and robust for harsh maritime environments

All Danfoss IXA products are designed from the bottom-up to operate in the maritime environment and to comply with the maritime standards.

Our engineers take great pride in testing the products thoroughly, and that is why our products undergo real-life field tests before being released to the market. In addition, the product qualification/type approval tests are carried out by third-party institutions and is our customers' guarantee for high technical standards.



One solution provider of emission monitoring

Danfoss IXA is one solution provider of emission monitoring.

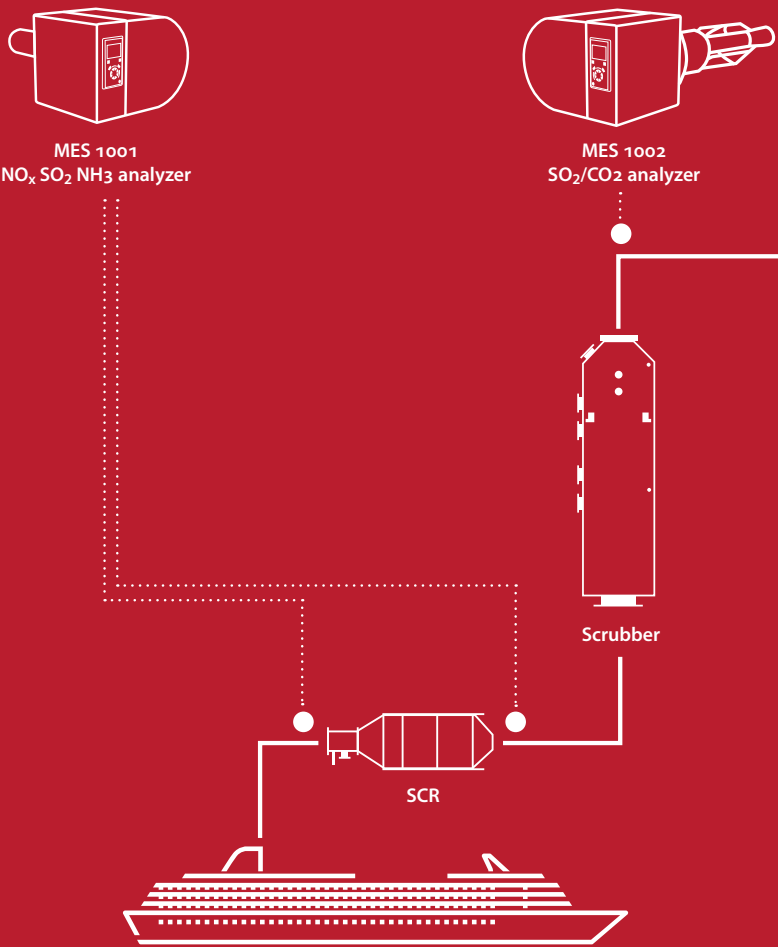
This covers monitoring and gathering of all emission data to be used for compliance, control, documentation, and optimization of processes in various applications throughout the engine room. This is done through platforms provided by the Danfoss IXA product portfolio.

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 on our website



MES 1001
Measurement ranges

NO _x	0 – 2000 ppm
NH ₃ *	0 – 100 ppm
SO ₂ *	0 – 1000 ppm

* Optional

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, SO₂ and NH₃ analyzer



MES 1001 MARPOL
NO_x, SO₂ and NH₃ analyzer



MES 1001 Ammonia
NH₃, NO_x analyzer



MES 1002
SO₂, CO₂ 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

Danfoss IXA
Marsvej 5
6000 Kolding
Denmark
ixa@danfoss.com
+45 74888500

Danfoss IXA can accept no responsibility for possible errors in catalogues, brochures and other printed material. Danfoss IXA reserves the right to alter its products without notice. This also applies to products already on order provided that such alternations can be made without subsequential changes being necessary in specification already agreed. All trademarks in this material are property of the respective companies. Danfoss IXA and the Danfoss logotype are trademarks of Danfoss A/S. All rights reserved.

© Danfoss IXA 2026