

Danfoss

IXA

Innovative marine emission monitoring with intelligent sensor technology

NO_x, SO₂ and NH₃ sensor, MES 1001



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.



Marine regulatory compliance calls for reliable and compliant solutions

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

The sensor 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.

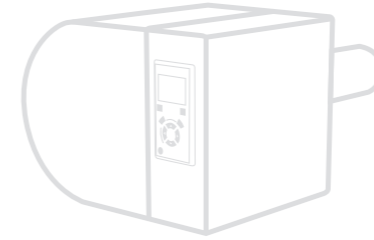


Comply with environmental regulations

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

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

The Danfoss IXA NOx, 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 sensor after the SCR and feed back the NOx 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 sensor 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

NOx, SO2 and NH3 sensor

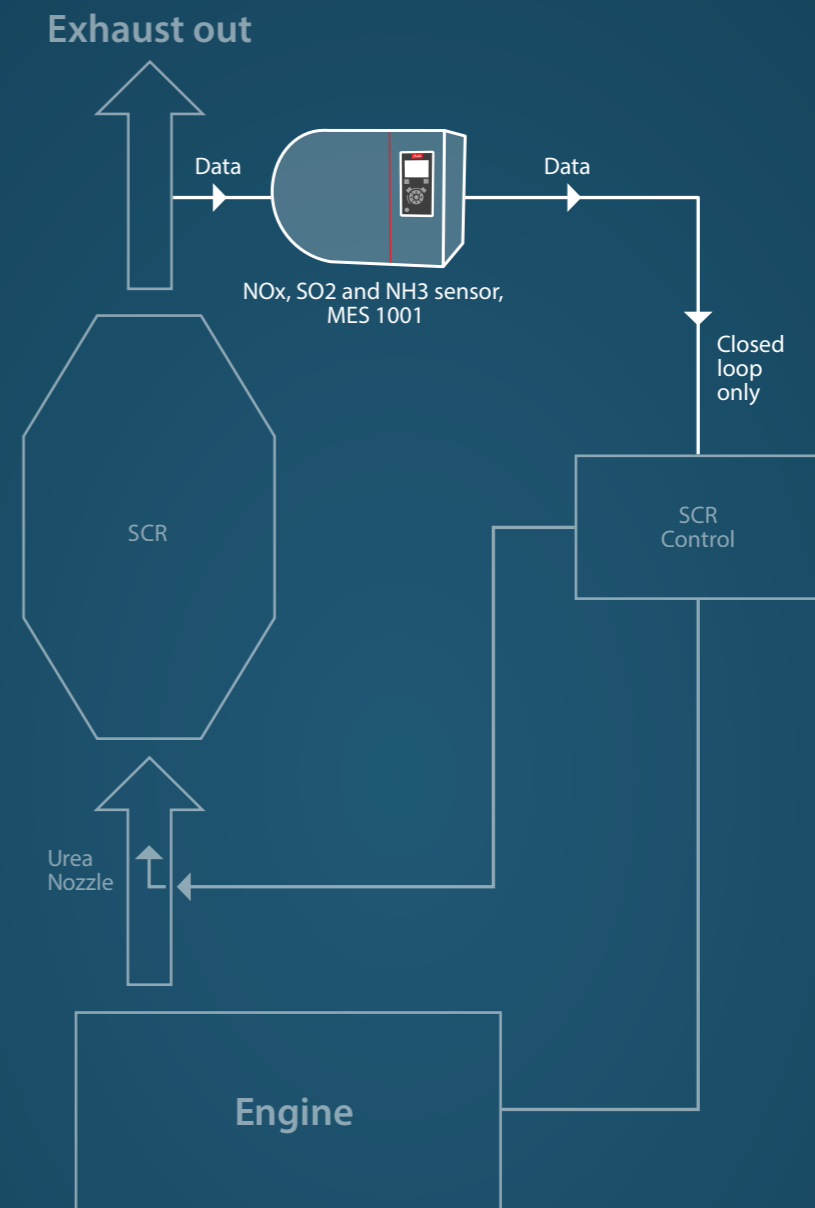
MES 1001 measures NOx, SO2 and NH3 gases directly in the exhaust pipe withstanding temperatures up to 500°C. The sensor can send data updates every second and is self-calibrating – this means almost no maintenance and no special training. It is easy to install, requiring only pressurized air, data cable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



KEY BENEFITS

- Compact
- Fast-responding
- Easy installation, operation and maintenance
- Operates in both high and low sulfur applications

Measurement that keeps you in control



The MES 1001 is ideal for monitoring NOx and ammonia in maritime SCR applications.

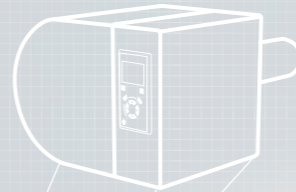
The sensor can monitor NOx emissions in open-loop SCR systems as well as in SCR closed-loop systems. In the latter case, the fast response time of the sensor makes it suitable for feeding back the NOx signal to the SCR control unit for fast and optimum dosing of the urea.

With the ever-increasing number of SCR systems being installed on ships worldwide to comply with the Tier 3 regulation, the monitoring of the ammonia becomes more and more important. An unmonitored ammonia slip is not only harmful to the environment, it can also over time damage the exhaust system of the ship 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.



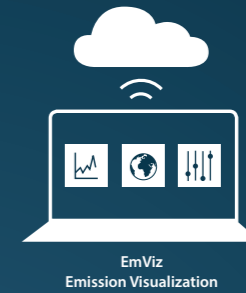
One solution provider of emission monitoring

Danfoss IXA is one solution provider of emission monitoring.

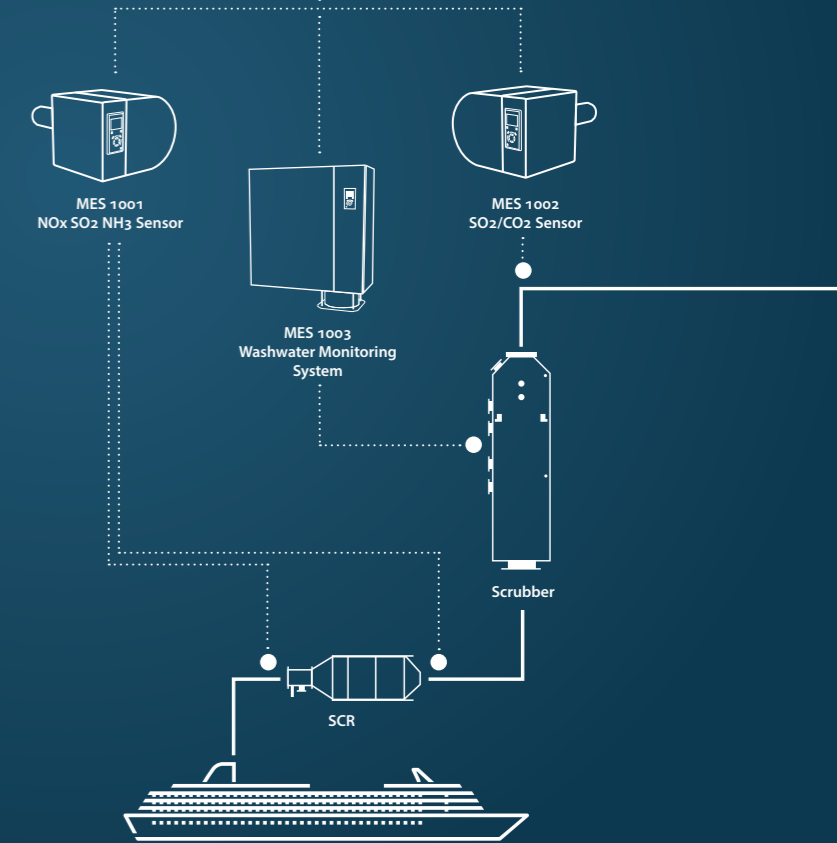
This covers monitoring and gathering of all emission data to be used for compliance, control, documentation, and optimization of processes in various applications throughout the engine room. This is done through platforms provided by the Danfoss IXA product portfolio.

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.



One solution provider of emission monitoring



MES 1001 Measurement ranges

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



MES 1001
NO_x SO₂ NH₃ Sensor



MES 1002
SO₂/CO₂ Sensor



MES 1003
Washwater Monitoring System

The Danfoss logo is written in a white, cursive script font on a red background.The IXA logo is written in a white, bold, sans-serif font on a red background.

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 sensors and systems, and our innovative sensors precisely and continuously measure climate parameters and environmentally harmful gases, providing documentation of regulatory compliance and essential input for energy optimization.

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.

Learn more at marine.danfoss.com

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