

## Data Sheet

**MES 1002****MES1002 - SO<sub>2</sub>/CO<sub>2</sub> CEMS for Scrubber Applications**[www.danfoss-IXA.com](http://www.danfoss-IXA.com)

MES 1002 is a cutting-edge maritime emissions monitoring system complying with international regulations for scrubbers. This advanced solution offers superior performance and compliance, supporting environmentally responsible and efficient vessel operations.

**Key Features**

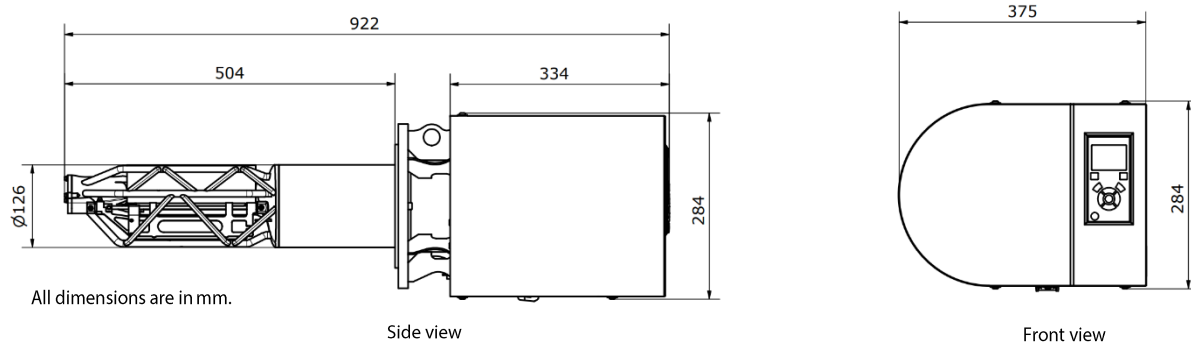
- **MARPOL Compliance:** MES 1002 ensures compliance with MEPC.340(77), reducing environmental impact.
- **Automatic Zero Calibration:** Prevents measurement drift and removes the need for frequent span gas calibration checks.
- **Real-Time Monitoring:** Continuous output assuring accurate data for regulatory compliance.
- **Minimal maintenance:** Replace light sources when notified by warning. Light source lifetimes 12-14 months of operational time.
- **Easy Installation:** Single-unit setup with minimal configuration and easy connection (only power, air, and data).
- **Remote Connectivity:** Modbus communication enables remote operation.
- **Reliable Design:** Proven and verified design through mechanical and life-time testing.
- **Log functionality:** Internal logging of gas concentrations, and emission ratio. Also warnings, alarms, and system status.



# MES1002 - SO<sub>2</sub>/CO<sub>2</sub> CEMS for Scrubber Applications

Prod. no. 100500

## Technical Drawing



## Technical Specification

Parameter	Description
<b>General</b>	
Application	In Situ CEMS for Scrubbers
Technology	SO <sub>2</sub> : UV absorption spectroscopy CO <sub>2</sub> : IR absorption spectroscopy
Mounting flange	Circular, bolted connection. Based on BS EN 1092, DN125, PN16 with modified bore
Mounting location	After Scrubber
Probe material	Inconel
<b>Supported gases</b>	
SO <sub>2</sub>	0 – 200 ppm
CO <sub>2</sub>	0 – 15 %
SO <sub>2</sub> /CO <sub>2</sub>	The analyzer calculates the SO <sub>2</sub> /CO <sub>2</sub> emission ratio in accordance with MEPC.340(77)
Output resolution	SO <sub>2</sub> : 0.1 ppm CO <sub>2</sub> : 0.01 % SO <sub>2</sub> /CO <sub>2</sub> : 0.01 ppm/%
<b>Environmental</b>	
Operating ambient temperature (analyzer)	0 – 55 °C
Exhaust gas temperature (Probe)	Max. 400 °C (measurement will stop at 100°C)
Storage temperature	-25 – 85 °C
Ingress protection	IP55
Humidity	95% RH

<b>Inputs and outputs</b>	
Power	24 VDC
Ethernet	10 BASE-T/100 BASE-TX for Modbus TCP/IP communication
RS-422	Ship GPS input Supported protocol: NMEA 0183
Digital inputs	2 (relay controlled)
<b>Compressed Air</b>	
Supply	5,5 – 9 bar, 250 l/min @ STP
Quality **	Install and maintain a filter before the analyzer to ensure constant compliance with ISO 8573-1:2010 [1:7:2]
<b>Power</b>	
Power supply	24 VDC ± 25%
Power consumption	< 60 W
<b>Dimensions</b>	
Size (H x W x D)	922 x 375 x 284 mm (incl. probe)
Weight	35 kg
<b>Approvals</b>	
Marine type approval	DNV
MARPOL	DNV Statement of compliance

\*\* In case the compressed air system holds pockets of oil/water which may flush into the analyzer, please contact our service, and support team for further assistance.

**Contact us!**

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