MES1002 SO_2/CO_2 CEMS for scrubber applications

Marine regulatory compliance calls for reliable and compliant solutions. MES1002 is a robust SO_2/CO_2 CEMS Analyzer designed for the harsh environment of Exhaust Gas Cleaning Systems (EGCS), also referred to as scrubbers.

KEY FEATURES

MES1002 complies with international regulations for scrubbers, and the analyzer represents a significant advancement in emission monitoring technology.

MARPOL COMPLIANCE: MEPC.340(77) and MEPC.259(68).

AUTOMATIC ZERO CALIBRATION: Eliminates span and zero drift and removes the need for calibration gas and on-site calibration.

REAL-TIME MONITORING: Continuous measurement of SO_2/CO_2 ratio assuring accurate data output for regulatory compliance.

MINIMAL MAINTENANCE: Benefit from a cost-effective solution with few maintenance requirements; Simple and regular air filter replacement and probe/optics cleaning, when notified by the analyzer maintenance request.

EASY INSTALLATION: Single-unit setup with minimal configuration and easy connection (only power, air, and data).

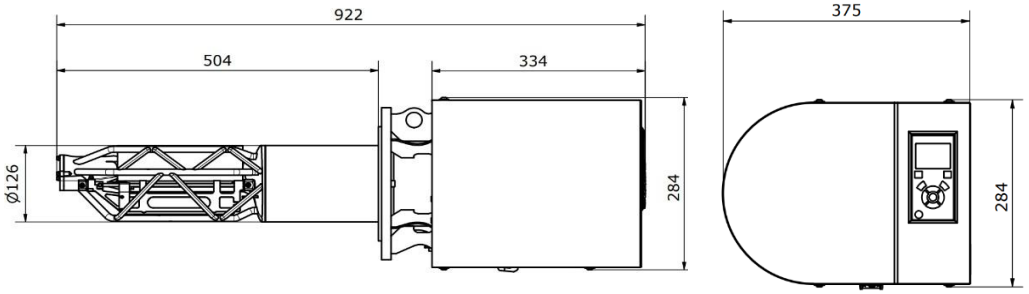
2-YEAR CALIBRATION VALIDITY: DNV approved drift-free technology prevents zero- and span-drift. No service technicians or span gas calibrations.

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.

CONTACT:
Danfoss IXA
Marsvej 5, DK 6000 Kolding
Tel: +45 74888500
ixa@danfoss.com

Technical drawing



All dimensions are in mm.

Side view

Front view

Technical specifications

Parameter	Description
General	
Application	In-situ CEMS for Scrubbers
Technology	SO_2: UV absorption spectroscopy CO_2: 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
Supported gases	
SO_2	0 – 200 ppm
CO_2	0 – 15 %
SO_2/CO_2	The analyzer calculates the SO_2/CO_2 emission ratio in accordance with MEPC.340(77)
Output resolution	SO_2: 0.1 ppm CO_2: 0.01 % SO_2/CO_2: 0.01 ppm/%
Environmental	
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

Inputs and outputs	
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)
Compressed Air	
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]
Power	
Power supply	24 VDC ± 25%
Power consumption	< 60 W
Dimensions	
Size (H x W x D)	922 x 375 x 284 mm (incl. probe)
Weight	35 kg
Approvals	
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