



# Data Sheet

MES1002 - SO<sub>2</sub>/CO<sub>2</sub> CEMS for Scrubber Applications – Prod. no. 100500

## Key benefits

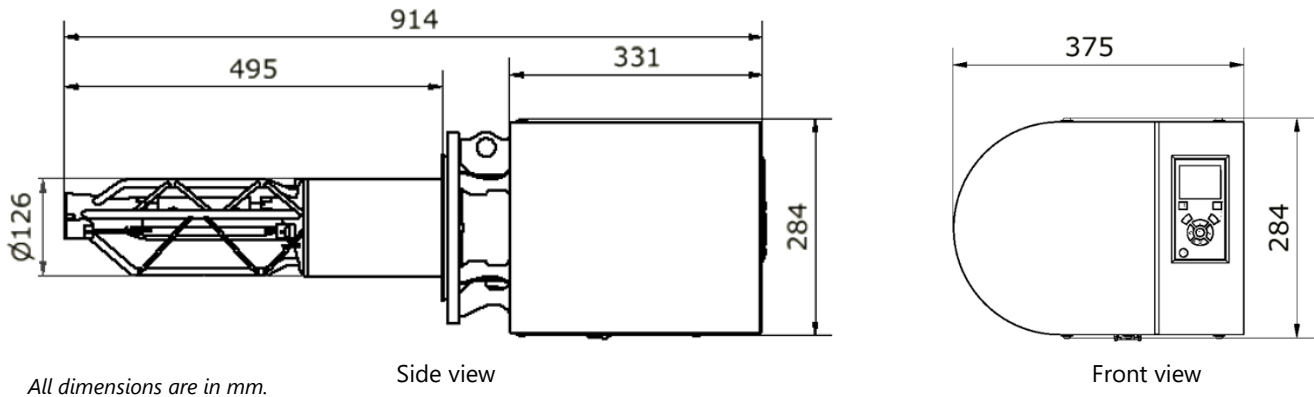
- Compliant with MEPC.259(68)
- Scrubber CEMS with built-in flow velocity measurement
- Easy installation
- Easy operation
- Easy maintenance
- Easy connection to ship management systems

## Maintenance

- Exchange of two lamps approx. every 12-14 months depending on use and environment.  
Low cost of ownership

## Functionality

- Automatic Zero Calibration
- Log functionality which logs various events like warnings, alarms, system status, measured gas concentration, emission ratio
- Display for local access
- Tamper-proof
- On-site gas check/calibration



## Specification

Prod. no. 100500

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 DIN 2633, DN125, PN16
Mounting location	After Scrubber
Probe material	Titanium (TBC)
<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 sensor calculates the emission ratio for SO <sub>2</sub> and CO <sub>2</sub> in accordance MEPC.184(59)
<b>Performance</b>	
Data update rate	1 second
Output resolution	SO <sub>2</sub> : 0,1 ppm (digital) CO <sub>2</sub> : 0,1 % (digital)
Response time	< 10 seconds (T <sub>90</sub> )
<b>Environmental</b>	
Operating ambient temperature (Sensor)	0 – 55 °C
Exhaust gas temperature (Probe)	Max. 400 °C (measurement will stop at 100°C)
Storage temperature	-25 – 85 °C
Ingress protection	IP65
Humidity	95% RH
<b>Inputs and outputs</b>	
Power	24 VDC
Ethernet	10 BASE-T/100 BASE-TX
RS-422	Ship GPS input Supported protocol: NMEA 0183
Digital inputs	2 (relay controlled)
Compressed Air	Instrument air from ship
Calibration Gas	Use SO <sub>2</sub> and CO <sub>2</sub> span gas according to Danfoss IXA specification

Parameter	Description
<b>Compressed Air</b>	
Supply	5,5 – 9 bar, max. 230 l/min @ 1 bar
Quality **	A filter must be installed before the sensor to ensure that air delivered to the sensor is compliant with ISO 8573-1:2010 [1:7:2] at all times.
<b>Power</b>	
Power supply	24 VDC ± 25%
Power consumption	< 125 W
<b>Dimensions</b>	
Size (H x W x D)	914 x 375 x 284 mm (incl. probe)
Weight	35 kg
<b>Approvals</b>	
Marine type approval	DNV-GL

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



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