

Statement of Compliance

This is to confirm that the undernoted product has been tested in accordance with the relevant requirements of MEPC.259(68) in respect of emission testing.

Emission Monitoring Analyzer Bühler Technologies BA 3 MA

Company Bühler Technologies GmbH
40880 Ratingen
Germany

Product Description: Emission Monitoring Analyzer

Type BA 3 MA

This is to Confirm: The "BA 3 MA" is intended to be part of a continuous emission monitoring system of SO_x emission installed on-board vessels operating an exhaust gas cleaning system (EGCS).

The "BA 3 MA" is found to be suitable as an emission monitoring analyzer of:

- SO₂ and CO₂ according MEPC.259(68)

The functional testing has been demonstrated under surveillance and to the satisfaction of DNV in accordance with MEPC.259(68).

The "BA 3 MA" meets the following requirements*:

- Principle of detection SO₂ and CO₂ (MEPC.259(68), 6.2)
- Accuracy (NTC 2008, App. III, 1.6)
- Precision (NTC 2008, App. III, 1.7)
- Noise (NTC 2008, App. III, 1.8)
- Zero and span drift (NTC 2008, App. III, 1.9/1.10)
- Calibration curve (linearity) (NTC 2008, App. IV, 5.5.1)
- Interference effects (NTC 2008, App. IV, 9)

* For CO₂ measuring ranges between 0-10 Vol% and 0-15 Vol%.

* For SO₂ measuring ranges between 0-100 ppm and 0-500 ppm.

According to MEPC.259(68), Appendix II, 6.5, both gas concentrations (SO₂ and CO₂) will be measured at the same residual water content in the sample and therefore no dry-to-wet conversion factors are required in the calculation of the SO₂/CO₂ ratio.



Digitally signed
by Fabian Kock
Date: 2021.11.23
12:37:51 +01'00'

Statement of Compliance

Documents:

"Testbericht zum Statement of Compliance regarding MEPC.259(68)";
Doc No.: BA 3 MA_08_2021 V.1.1; dated 07.09.2021

Operation and Installation Instructions,
"Gasanalysator für maritime Emissionsüberwachung BA 3 MA - Betriebs- und Installationsanleitung"; Doc No.: BD550027; Version: 11/2021

Technical Data

BA 3 MA			
Component	Sensor type	Small range*	Large range*
SO ₂	NDUV	0 - 100 ppm	0 - 500 ppm
CO ₂	NDIR	0 - 10 Vol%	0 - 15 Vol%

* Measuring ranges free adjustable between "Small range" and "Large range"

This is to Note

1. In order to completely fulfil the requirements of MEPC.259(68) for "Emission Testing", additional equipment (e.g. sample probe, sampling tubes, gas dryer, data recording) will have to be installed.
2. Requirements of MEPC.259(68), chapter 6.6 and 6.7 regarding SO₂ losses have to be observed.
3. In case ambient temperature is below +5°C or above +45°C the "BA 3 MA" may only be operated in an air-conditioned cabinet.
4. The "BA 3 MA" shall be installed, calibrated and operated in compliance with the operation and installation Instructions.
5. For SO₂ and CO₂ monitoring according MEPC.259(68) the calibration interval with calibration gas could be prolonged up to one week without exceeding the zero and span drift according NTC 2008, Appendix III, 1.9 and 1.10, if the daily automatic zero point with cleaned instrument air, ambient air or N₂ is carried out.

Remark

The compliance with relevant requirements of the DNV Type Approval System has not been tested.



Digitally signed
by Fabian Kock
Date: 2021.11.23
12:37:33 +01'00'