



**TYPE APPROVAL CERTIFICATE**

No.

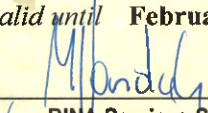
**ELE013122XP**

**This is to certify** that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	<b>Emission Sensor</b>
<i>Type</i>	<b>Emission Sensor for NO<sub>x</sub>, SO<sub>2</sub>, NH<sub>3</sub> MES 1001</b>
<i>Applicant</i>	<b>DANFOSS A/S - Danfoss IXA A/S Marsvej 5 DK-6000 Kolding DENMARK</b>
<i>Manufacturer</i>	<b>BB Electronics</b>
<i>Place of manufacture</i>	<b>Ane Stavnings Vej 21 8700 Horsens DENMARK</b>
<i>Reference standards</i>	<b>Rules for the Classification of Ships - Part C - Machinery, Systems and fire protection - Ch.3, Sect.6, Tab.1.</b>

Issued in **GDANSK** on **February 10, 2022**. This Certificate is valid until **February 9, 2027**



  
RINA Services S.p.A.  
Jaroslaw Kondracki

This certificate consists of this page and 1 enclosure





## TYPE APPROVAL CERTIFICATE

No.

ELE013122XP

Enclosure - Page 1 of 1

Emission Sensor for NO<sub>x</sub>, SO<sub>2</sub>, NH<sub>3</sub>

MES 1001

### Product description

The In Situ Emission Sensor is intended for measuring gases in various applications. The sensor measures the content of gases (NO<sub>x</sub>, SO<sub>2</sub> and NH<sub>3</sub>) in the engine exhaust gas flow. This Type Approval Certificate demonstrates MES 1001 compliance with IACS E10 Rev.7(2018).

### MES 1001 specification:

Power supply:	24 V DC
Ambient temperature:	0 - 55° C
Exhaust gas temperature:	max. 500° C
Degree of protection:	IP65
Analogue output:	4 x 4 -20 mA
Digital input:	2 (relay controlled)
Digital output:	2 (relay controlled)
Interface:	Ethernet (10 BASE-T, 100 BASE-TX), Modbus TCP/IP
GPS Interface:	RS-422
Supported gases	
NO <sub>x</sub>	0 - 2000 ppm
SO <sub>2</sub>	0 - 1000 ppm
NH <sub>3</sub>	0 - 100 ppm

### Reference Documents:

100100-PRD-E3 MES1001  
100131-PRD-E1 Backend assembled  
100133-PRD-F Fiber-Lens Assy  
100171-PRD-G Electrical components assembly  
101067-PRD-A Cabinet with LCP  
100446-PRD-A Probe 100 mm Assy  
100567-PRD-B Lamp and Sacrificial Fiber Assy  
100300-DSH-H MES 1001 Data Sheet  
100310-MAN-E MES 1001 Installation Guide  
100320-MAN-H MES 1001 User Guide  
100591-REP-B MES 1001 Software release notes  
101232-REP-A MES 1001 EMC Test, November 2020  
101233-REP-A MES 1001 Vibration Test, November 2020  
101301-REP-A DC/DC Converter Test, September 2020

### Test Report:

100593-REP-A Delta test report (original IACS E10 Rev.5 test report)

*This certificate annuls and replaces the previous one ELE234219XG*



**GDANSK February 10, 2022**

RINA Services S.p.A.  
Via Corsica, 12 - 16128 Genova  
Tel +39 010 53851  
Fax +39 010 5351000

