



Type Approval Certificate

[Gas Monitoring System]

Initial Approval 23 January 2024
Manufacturer Green Instruments A/S
 Erhvervsparken 29, 9700 Brønderslev, Denmark
Product Description Type : Multigas Monitoring System G7200
 Intended for the measurement of exhaust gas concentrations

" See Appendix 1 "

Approval Condition " See Appendix 1 "

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships, MEPC.340(77)

This Certificate is valid until 22 January 2029

Issued at Busan, Korea on 23 January 2024



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME24003951877) and certificate No.(CPH38050-AC004).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 23 January 2024

A. Product Description

1. Product Specification

- 1) System Description (Type : G7200)
The G7200 is a multigas monitoring system designed to measure exhaust gas concentrations by sampling the gas and directing it into the gas analyzer through probes equipped with heated hoses.
- 2) Monitoring Cabinet
 - Power Supply : 230VAC, 50/60Hz
 - External Communication : Modbus TCP/IP
 - Software Version : 0.9.0 dated 29-09-2023
- 3) Gas Analyzer
 - Type : G7010, G7210, G7230
 - Applicable gas : CO₂, SO₂, NO₂, NO, CH₄, H₂O
 - Accuracy : ±2% of reading or ≤0.3% of full-scale

Applicable Gas	Measuring range	Measuring principle
CO ₂	0 ~ 10 or 0 ~ 20 %	NDIR
SO ₂	0 ~ 200 or 0 ~ 300 ppm	NDIR
NO ₂	0 ~ 100 ppm	NDUV
NO	0 ~ 1000 ppm	NDUV + NDIR
CH ₄	0 ~ 5000 ppm	NDIR
H ₂ O	0 ~ 20000 ppm	NDIR

2. Approved Drawings and Documents

- 1) Approved Documents
 - Drawing No. 11350 dated 30-11-2021
 - Drawing No. 11703 dated 16-12-2022
 - Drawing No. 11956 dated 12-07-2022
 - Drawing No. 11891 dated 07-06-2023
 - Drawing No. 11950 dated 06-07-2023
 - List of electronic components dated 13-07-2023
- 2) Reference Documents
 - G7200 Multigas User Manual ver.1.0
 - Software Quality Assurance Plan ver.1.0

3. Test Reports, etc.

- 1) Environmental Test
 - EKTOS Test Report No. P23-0082-1 dated 09-08-2023
- 2) Performance Test
 - 04-05-2023 Ver. 1.0 dated 04-05-2023

B. Approval Condition

1. Application & Limitation

- 1) Unless specially directed by the Administration, this approval is not to be interpreted as a replacement for approval from the flag Administration.
- 2) This approval is granted on the basis of the approved documentation and test reports.
- 3) The manufacturer is to inform this Society of all kinds of the equipment including software. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 4) Installation is to be in accordance with manufacture's instruction.
- 5) This approval only covers hardware listed under Product description.

Product Description and/or Approval Condition

Date of Issue : 23 January 2024

- 6) Degree of protection shall be complied with Rule Pt. 6 Ch. 1 Sec. 2 201. 2. (5).
 7) When the product is used in installations intended to comply with MEPC. 340(77), installation and performance as per requirements in Annex section 6, 7, 8 of MEPC. 340(77) are to be confirmed by the Society.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual product Certification is not required.

3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

- 1) Test condition (IACS UR E10 Rev. 8 basis)

Approved Testing	Approved location	Remark
EMC	For other than bridge and deck zone	-
Temperature	+5 ~ +55°C	-
Vibration	Acceleration $\pm 0.7g$	-

< End of Certificate >

KOREAN REGISTER