



Type Approval Certificate

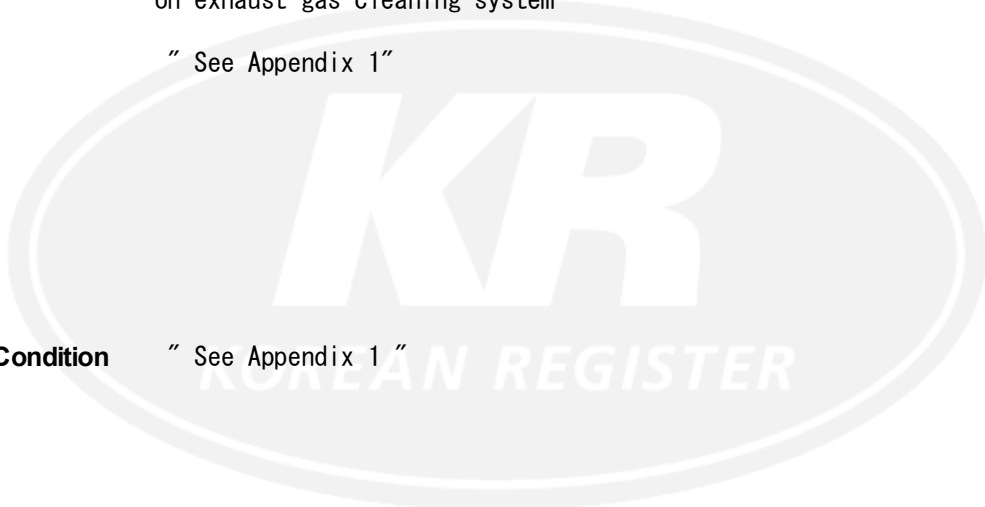
[Water Monitoring System]

Initial Approval 29 August 2022
Manufacturer Green Instruments A/S
Erhvervsparken 29, 9700 Brønderslev, Denmark

Product Description Type : G6200
Intended for the measurement of washwater condition on exhaust gas cleaning system

" 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.259(68) and MEPC.340(77)

This Certificate is valid until 28 August 2027

Issued at Busan, Korea on 29 August 2022



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(ME22024736665) and certificate No.(CPH38050-AC003).



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 : 29 August 2022

A. Product Description

1. Product Specification

- 1) Product description ;
The G6200 water monitoring system is a continuous emission monitoring system for wash water. As a standard configuration the system monitors PAH, turbidity, pH and temperature.
- 2) Specification ;
 - Power Supply : 400 ~ 440 VAC, 50 / 60 Hz
 - Communication : Modbus TCP/IP, Modbus TCP/RTU converter (RS-485)
 - Display (HMI) : 7inch TFT LCD color display
 - Firmware version : > 0.0.25
 - Sensor Modules : See below table

	G6111 PAH	G612X Turbidity	G6130 pH and Temperature
Brand/Type	G6111:GI/G6111 PAH G6111:GI/G6111 PAH	G6120: ABB/4690 series G6121: ABB/ATS430 series * AWT420 Transmitter	MJK/pHix Compact
Measured by	UV Fluorescence	Nephelometry	Glass electrode
Range	0-800 μ g/l PAHphe Configurable	0-400 NTU/FNU Configurable	0-14 pH units 0-50 $^{\circ}$ C
Accuracy	Max \pm 5% of sensor range or Max \pm 5% of the nominal standard test concentration, which value is not less than 80% of the sensor range.	\pm 2 NTU	\pm 0.2 pH unit Fully temperature compensated

2. Approved Drawings and Documents

- 1) Approved Drawings
 - : Component Layout Dwg. No. 11247 Rev. - dated 2021-09-14
 - Installation Layout Dwg., No. 11246 Rev. A dated 2021-10-01
 - P & ID for G6200 Water Monitoring System Dwg. No. 11182 Rev. A dated 2021-10-01
 - Electrical Drawings Dwg. No. 11076 Rev. - dated 2021-12-09
- 2) Reviewed Documents
 - : User Manual for G6200 Water Monitoring System Ver.1.0 dated 2022-02

3. Test Reports, etc.

- 1) Test Reports
 - : Performance Test Reports for Type Approval dated 2021-12-09
 - Type Approval Test of System 6200 issued by EKTOS dated 2021-09-21
 - Type Approval Test of AWT420 issued by EKTOS dated 2021-04-20
 - G6200 IP Rating Assessment dated 2021-09-28
 - Additional Test Reports dated 2021-09-10
 - Flame Retardant Test issued by EKTOS dated 2021-10-21
- 2) Etc.
 - : G6200 Flame Retardant Assessment issued by Green Instrument

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the approved documentation and test reports.
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment including software. If the changes are recognized to affect functionality of the approved

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equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.

- 3) Degree of protection shall be complied with Rule Pt. 6 Ch. 1 Sec. 2 201.2. (5).
- 4) This approval only covers hardware listed under Production description.
- 5) When the product is used in installations intended to comply with MEPC. 259 (68) / MEPC. 340 (77), installation and performance as per requirement in MEPC. 259 (68) / MEPC. 340 (77) Annex section 7, 8, 10 are to be confirmed by the Society.
- 6) Installation is to be in accordance with manufacture's instruction.
- 7) The product shall not be installed in the bridge or on open decks.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Unless specially directed by the Administration, this approval is not to be construed as a substitute for a flag Administration's approval.
- 2) 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)

Test	Condition	Remark
EMC	All locations excluding the bridge and deck zone	-
Temperature	+5°C ~ +55°C	-
Vibration	Acceleration $\pm 0.7g$	-
Ingress protection	IP65	-
* Note : Flame Retardant has been carried out.		

< End of Certificate >