



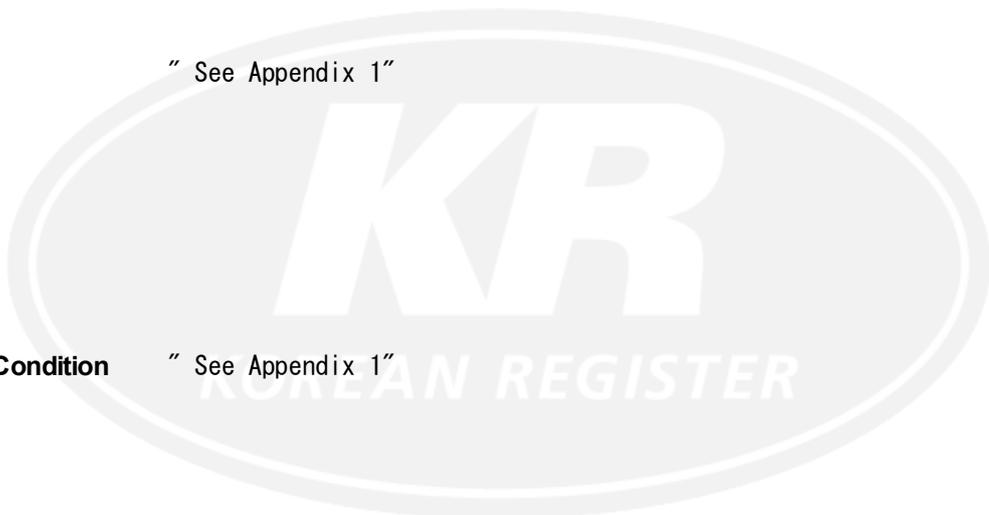
# Type Approval Certificate

[ Water Monitoring System ]

**Initial Approval** 22 May 2020  
**Manufacturer** TriOS Mess-und Datentechnik GmbH  
Buergermeister-Broetje-Strasse 25, 26180 Rastede, Germany

**Product Description** Type : EGC Water Analyzer  
Intended for the measurement of wash water 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 and MEPC.340(77)

This Certificate is valid until 21 May 2030  
Issued at Busan, Korea on 12 June 2025



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(ME25024689868) and certificate No.(HMB41280-AC001).



**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 : 12 June 2025

### A. Product Description

#### 1. Product Specification

- 1) System Description (Type: EGC Water Analyzer)  
The EGC Water Analyzer incl. Sensors and Controller is a measurement cabinet to quantify polycyclic aromatic hydrocarbons (PAHs), measure turbidity and determine the pH value of wastewater for the exhaust gas cleaning system.
- 2) System Specification
  - Power Supply : 230VAC (Range : 100-240VAC, 50-60Hz)
  - Measuring Index : PAH / Turbidity / pH
  - Interface : Ethernet (Modbus TCP/IP), Analog outputs
  - Software Version : 1.5.x or higher
- 3) System comprising
  - PAH Sensor : enviroFlu-HC 500/5000
  - Turbidity Sensor : TTurb
  - pH/Temperature Sensor : TpH-D
  - Controller : TriBox3
- 4) Sensor Specification : See below table

	PAH	Turbidity	PH
Type	enviroFlu-HC 500 enviroFlu-HC 5000	TTurb	TpH-D
Range	0-500 ppb 0-5000 ppb	0-1000 FNU	0-14 pH 2-40°C
Accuracy	± 5 % FS	± 2FNU	± 0,06 pH

#### 2. Approved Drawings and Documents

- 1) Specification  
D06-069en201903 Technical Specifications TpH-D,  
D06-070en201904 Technical Specifications TTurb,  
D06-032en201903 Technical Specifications enviroFlu
- 2) Layout  
D10-081en201907 Rev. ZP501813
- 3) Manual  
D01-081en202211 Manual EGC Water Analyzer  
D01-032en202212 Manual enviroFlu  
D01-069en202211 Manual TpH-D  
D01-070en202211 Manual TTurb

#### 3. Test Reports, etc.

- 1) Test Report  
No. 18-11161A Rev. 3 (2019. 05. 23) issued by PAConsult GmbH,  
No. 18-11008A Rev. 1 (2018. 12. 07) issued by PAConsult GmbH,  
No. 18-11008B Rev. 1 (2018. 12. 14) issued by PAConsult GmbH,  
No. 18249-1 R1-R00 (2018. 11. 16) issued by TUV Nord,  
No. 21144-3-R00 (2021. 05. 16) issued by TUV Nord,  
21DE-00814 (2021. 10. 18) issued by PAConsult GmbH,  
DA1-081de201812 (2018. 12. 06), DA1-032de201812 (2018. 11. 22),  
DA1-070de202207, DA1-081de202207 issued by Trios.

### B. Approval Condition

#### 1. Application & Limitation

- 1) This approval is granted on the basis of the approved documentation and test reports.
- 2) Degree of protection is to be complied with Rule Pt. 6 Ch. 1 Sec. 2 201. 2. (5).

## Product Description and/or Approval Condition

Date of Issue : 12 June 2025

- 3) The manufacturer is to inform this Society of all kinds of revisions of the equipment including the major changes of 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) This approval only covers hardware listed under Production description.
- 5) The installation and performance of the product, when installed on a vessel, are to comply with the requirements set out in Annex sections 7, 8, and 10 of MEPC.340(77) and are to be verified by the Society.
- 6) Unless specifically directed by the Administration, this approval should not be interpreted as a replacement for approval from the flag Administration.
- 7) Installation is to be in accordance with the manufacturer's instructions.

### 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

Approved Testing	Approved location	Remark
EMC	All locations excluding the bridge and deck zone	-
Temperature	+5 ~ +55°C	-
Vibration	Acceleration $\pm 0.7g$	-

< End of Certificate >