

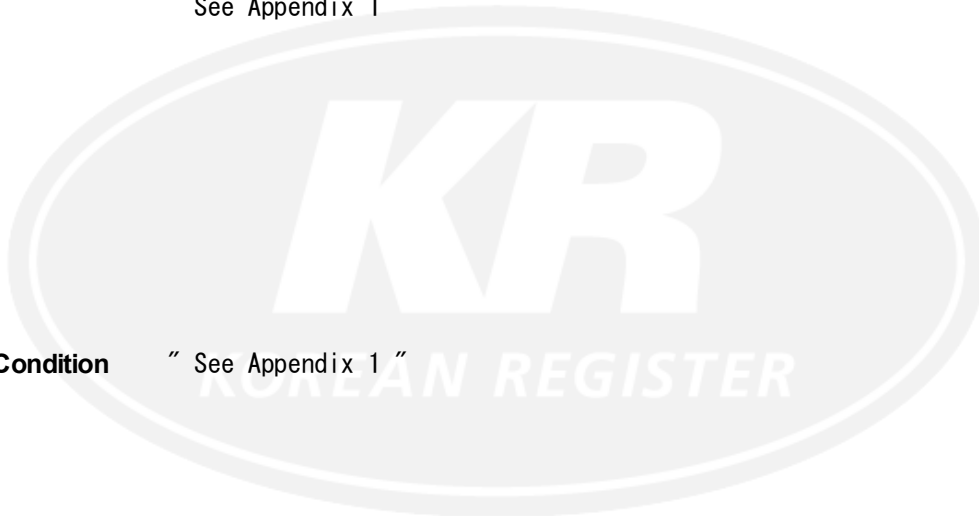


# Type Approval Certificate

[ Gas Detector ]

**Initial Approval** 30th June, 2009  
**Manufacturer** GASTRON Co., Ltd.  
 23, Gunpocheomdansaneop 1-ro, Gunpo-si, Gyeonggi-do, 15881, Korea  
**Product Description** Type : GTD-2000Ex

" 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 IEC 60079-29-1

This Certificate is valid until 29th June, 2024

Reissued at Busan, Korea on 24th November, 2021



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(ME21029757599) and certificate No.(INC15142-AE003).



**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 : 24th November, 2021

### A. Product Description

#### 1. Product Specification

- 1) Power supply : DC 24V
- 2) Measuring Gas : Flammable vapours
- 3) Measuring Type : Diffusion Type
- 4) Measuring Method : Catalytic Cell,  
Thermal Conductivity Cell,  
Heated-semiconductor Cell
- 5) Output : 4 to 20mA DC/Full Scale
- 6) Display : Local Digital LCD Display
- 7) Ex-proof grade : Ex db IIC Gb T6/T5/T4
- 8) Ingress protection : IP66/67
- 9) Software version : V1.17

#### 2. Approved Drawings and Documents

- 1) Instruction manual for GTD-2000Ex

#### 3. Test Reports, etc.

- 1) Test Reports
  - Visual & Functional Test : G1209-0002
  - Environment Test : KOMERI-CTA-12T1266
  - EMC Test : K2741/E07, KOMERI-0311-12T1267, KOMERI-0311-18T0731,
  - IP Test : KOMERI-0306-12T1317
  - Performance Test : N 0568, KOMERI-0314-18T3951, KOMERI-0314-18T3952,  
KOMERI-0311-18T3953
  - Software Module Test : GTD2000\_MTS\_V1\_1-080910 Rev 1.01
  - Product Acceptance Test : GTD2000\_PATS\_V1\_01-080911 Rev 1.01
- 2) Software Quality Plan No. GTD2000\_SQP\_C Rev. A

### B. Approval Condition

#### 1. Application & Limitation

- 1) This approval is granted on the basis of the approved documentation and the test reports (IACS UR E10 Rev.8).
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment. 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.
- 3) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2. (5).
- 4) The product shall not be installed in the bridge or on open decks.
- 5) Explosion-proof certification by a notified/recognized Certification Body is not covered by this certificate. Ratings and Special Conditions for Safe Use in hazardous areas are to be obtained from the relevant valid Ex-Certificate.

#### 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

N/A

< End of Certificate >