



Type Approval Certificate

[Gas Detection System]

Initial Approval 30th June, 2009
Manufacturer GASTRON Co., Ltd.
23, Gunpocheomdansaneop 1-ro, Gunpo-si, Gyeonggi-do, 15881, Korea

Product Description Type : GTC-200A

“ 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.

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(ME21029929598) and certificate No.(INC15142-AC002).



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

System comprising of;

- 1) Common Alarm Unit
 - Input/Output Singal : RS-485 / SPDT relay dry contact
 - Alarm : Buzzer & LED
- 2) Channel Control Unit
 - Input/Output Singal : 4-20mA / 4-20mA & SPDT relay dry contact
 - LED bar graph & Digital Indicating
 - Channel Control Unit can be connected with one Gas Detector
- 3) Power Unit (Option) : Input DC 24V, Output DC 24V
 - * Power supply : DC 24V
 - * This system can be built up with up to 63 units of Channel Control Unit

2. Approved Drawings and Documents

- 1) Instruction manual for GTC-200A

3. Test Reports, etc.

- 1) Test Reports
 - Gastron No. QSP-2009-01 (2009. 04. 26)
 - KTI No. KTI09EV05001 (2009. 05. 07)
 - KFI No. 2007-12-1483 (2007. 12. 28)
 - ERI No. ERI-F07-0865 (2007. 12. 07)
 - TUV NORD No. K2742/E07 (2007. 07. 13)
 - KOMERI No. KOMERI-0311-18T3945 (2019. 03. 18), KOMERI-0314-18T3942 (2019. 04. 03),
KOMERI-0306-18T4552 (2019. 01. 11), KOMERI-0306-18T3944 (2019. 04. 01),
KOMERI-0306-18T3947 (2019. 04. 01), KOMERI-0602-18T3946 (2019. 03. 28),
KOMERI-0314-18T3943 (2019. 03. 29)

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the approved documents and the test reports.
- 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 on open decks.
- 5) When this system is to be installed in the vicinity of a standard or a steering magnetic compass, the components should have the minimum safe distance 5 m or more at which it may be mounted from such compasses.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) In case where the product is installed on board, the system drawings for individual vessel are to be approved by this Society.
- 2) Individual product certification is 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 including the bridge and deck zone	-
Temperature	+5°C ~ +55°C	-
Vibration	Acceleration $\pm 0.7g$	-
Ingress protection	IP2X	-

< End of Certificate >