



## ***Confirmation of Product Type Approval***

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 19-MAY-2024. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

**Product Name: Gas Detector**

**Model Name(s): GIR-3000, GTD-2000Ex, GTD-2000Tx(O2), GTD-2000Tx(H2S)**

**Presented to:**

GASTRON CO., LTD.  
23 GUNPOCHEOMDANSANEOP 1-RO  
Korea, Republic of

|                               |   |
|-------------------------------|---|
| <b>Intended Service:</b>      | Marine & Offshore Application.  |
| <b>Description:</b>           | Fixed gas detector to monitor flammable, oxygen and toxic gases.  |
| <b>Tier:</b>                  | 3   |
| <b>Ratings:</b>               | 1. Input voltage range: 18 to 32Vdc (24Vdc nominal) 2. Input voltage range: 18 to 32Vdc (24Vdc nominal) 3. Max power consumption: Max 6 Watts. At 24Vdc 4. Current output: 4-20mA (Source or Sink) 5. Operating Temperature: -40 deg.C ~ 80 deg.C 6. IP rating: IP66/67 7. Explosion-proof type - GIR-3000 & GTD-2000Tx series: Ex d IIC Gb T6 (-40 deg.C ~ +60 deg.C ) T4 (-40 deg.C ~ +80 deg.C) - GTD-2000Ex: Ex d IIC Gb T6/T5 (-40 deg.C ~ +60 deg.C ) T4(-40 deg.C ~ +80 deg.C) |
| <b>Service Restrictions:</b>  | 1. Unit Certification is not required for this product. 2. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.  |
| <b>Comments:</b>              | 1. The manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product. 2. The installation is to be in accordance with the manufacturer's instruction.   |
| <b>Notes / Documentation:</b> | This Product Design Assessment is based on as follows: 1. Technical Documents for Type Approval A. Application form B. Product Particular/Specification/Applicable Standard C. Drawing/Wiring Diagram D. Operating Instruction Manual E. Software   |

Control F. Relative certificate G. Quality control system H. Test Procedure / Test Reports (see the below 2) 2. KOMERI Certificate and Test Reports a) IP test report (Degree of protection) No.: KOMERI-0306-12T1566/12T1317/12T1567 (date: 25 Oct. 2012) b) Environmental Test Report No.: KOMERI-CTA-12T1268/12T1266/12T1270 (date: 09 Jan. 2013) KOMERI-0314-12T1277 (date: 30 Nov. 2012) KOMERI-0306-12T1276 (date: 23 Oct. 2012) KOMERI-0602-12T1279-1 (date: 29 Nov.2012) KOMERI-0314-18T3949/18T3952/18T3956 (date: 03 April 2019) c) EMC Test Report No.: KOMERI-0311-12T1269/12T1267/12T1271/12T1278 (date: 07 Jan. 2013) KOMERI-0311-18T0730/18T0731 (date: 27 March 2018) KOMERI-0311-18T3950/18T3953/18T3957 (date: 8 April 2019) d) Performance Test Report No.: Sira-N 0568 / N0569 (the tests were carried out over the period 23 Oct. 2007 to 27 Feb. 2008) KOMERI-CTA-12T1467 (date: 28 Jan. 2013) KOMERI-CTA-12T1280 (date: 23 Jan. 2013) KOMERI-CTA-2T1388 (date: 5 Feb. 2013) KOMERI-CTA-12T1468 (date: 30 Jan. 2013) KOMERI-0314-18T3948/18T3951 (date: 28 March 2019) KOMERI-0314-18T3954 (date: 10 April 2019) e) Visual & Function Test Report No.: G1209-0002/0003 (date: 20 Sep. 2012) f) General Requirement of the EN50104:2010/45544: 2000 Report No.: G1209-0001/0004 (date: 20 Sep. 2012) 3. Explosion-proof Certificate No.: IECEx SIR 08.0003, Sira 08ATEX1003

**Term of Validity:**

This Product Design Assessment (PDA) Certificate 19-BK1861653-PDA, dated 20/May/2019 remains valid until 19/May/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**ABS Rules:**

2019 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.11.1, 4-8-3/13.3.2, 4-8-4/27.5.1, 4-9-8/13.1 and Table 1 2019 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/Table 3, 4-8-3/1.11.1, 4-8-4/27.5.1, 4-9-9/13.1 and Table 1 2019 Steel Vessels Under 90 Meters (295 Feet) in Length 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-1/15, 4-6-3/11.1.1 (a), 4-6-3/11.3.1, 4-7-2/Table 1, 4-7-4/3.9 2019 Offshore Support Vessels 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.11.1, 4-8-3/13.3.2, 4-8-4/27.5.1, 4-9-8/13.1 and Table 1 2019 Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-3-1/3.7, 4-3-1/15, 4-3-3/9.1.2, 4-3-3/9.3.1 2019 Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-3-1/15, 4-3-3/9.1.2 2019 Facilities on Offshore Installations 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-6/5.1, 3-6/Table 1A and 1B

**National Standards:  
International Standards:**

IEC 60068-2-1:2007 IEC 60068-2-2:2007 IEC 60068-2-30:2005 IEC 60092-504:2016 IEC 60079-0:2017 IEC 60079-1:2014 IEC 60529:2001 IEC 60533:2015 EN 60079-29-1:2016 EN 45544:2015 EN 50104:2010 EN 60945:2002

**Government Authority:  
EUMED:  
Others:**

| Model Certificate | Model Certificate No | Issue Date  | Expiry Date |
|-------------------|----------------------|-------------|-------------|
| PDA               | 19-BK1861653-PDA     | 20-MAY-2019 | 19-MAY-2024 |

ABS Programs

ABS has used due diligence in the preparation of this certificate and it represents the information on the product in the ABS Records as of the date and time the certificate was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in

class with ABS. Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.