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Notified Body 2690 - MARINE EQUIPMENT DIRECTIVE 2014/90/EU

EC TYPE EXAMINATION CERTIFICATE

as per Module B of Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations and Commission Implementing Regulation (EU) 2025/1533 of 23 July 2025

This certificate is issued to:

RIKEN KEIKI Co., Ltd.

2-7-6, Azusawa, Itabashi-ku, 174-8744, Tokyo, JAPAN

for the type of product

**FIXED OXYGEN ANALYSIS AND/OR GAS DETECTION EQUIPMENT - CATEGORY 3
(EXPLOSIVE GAS ATMOSPHERES)**

SD-3 Series

Requirements:

Row 5 of 5 of Regulation (EU) 2025/1533:

SOLAS 74 convention as amended, Regulations II-2/4, VI/3.

IMO Res. MSC.98(73) -(FSS Code)- as amended by MSC.206(81), MSC.217(82), MSC.292(87), MSC.311(88), MSC.327(90), MSC.339(91), MSC.367(93), MSC.403(96), MSC.410(97), MSC 457(101) and MSC.484(103), 15

IMO MSC.1/Circ.1370

IEC 60092-504:2016

IEC 60533:2015

EN 50104:2019 incl. EN 50104:2019/A1:2023

EN 60079-29-1:2016 incl. EN 60079-29-1:2016/A1:2022 and EN 60079-29-1:2016/A11:2022

EN 60079-0:2018 incl. AC:2020-02 and A11:2024

This certificate is issued on behalf of the French Maritime Authorities to attest that Bureau Veritas Marine & Offshore did undertake the relevant type-examination procedures for the product identified above which was found to comply with the relevant requirements of the Directive 2014/90/EU of the European Parliament and of the Council of 23 July 2014 as transposed in the French Regulations.

This certificate will expire on: 01 Apr 2031

For Bureau Veritas Marine & Offshore Notified Body 2690,

At BV KOBE, on 01 Apr 2026,

Shinichi Takemoto

This certificate was created electronically and is valid without signature



This certificate does not allow to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark ) to the products corresponding to this type. To this end, the production-control phase module (D, E or F) of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a notified body.

This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. Bureau Veritas Marine & Offshore is designated by the French Maritime Authority as a "notified body" under the terms of the French Regulations Division 140 Chapter 140-2. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

Gas Detector with Signal Converter **SD-3 Series.**

1.1 - Approval Range:

Model	Type	Detection method	Detection principle
SD-3RI	Main unit	Diffusion	infrared type
SD-3NC	Main unit	Diffusion	New ceramic type
SD-3DRI	Main unit	Suction	infrared type
SD-3DNC	Main unit	Suction	New ceramic type
SD-3SC	Main unit	Transmitter only	
GD-3RI	Remote sensor head	Diffusion	infrared type
GD-3NC	Remote sensor head	Diffusion	New ceramic type

1.2 - Main Specifications:

Measuring Gas	Combustible gas
Measuring Range	RI type (SD-3RI/DRI, GD-3RI): - methane: 0 - 100% LEL - propane: 0 - 100% LEL/0-100% vol - methanol: 0 - 100% LEL - ethylene: 0 - 100% LEL - butadiene: 0 - 100% LEL - isobutane: 0 - 100% LEL/0-100% vol - isobutylene: 0 - 100% LEL/0-100% vol DC type (SD-3NC/DNC, GD-3NC): - methane: 0 - 100% LEL - methanol: 0 - 100% LEL - hydrogen: 0 - 100% LEL - ethylene: 0 - 100% LEL - isobutane: 0 - 100% LEL
Accuracy	±5% F.S.
Response Time	t(90) ≤ 60s
Operating Temperature	-40°C to 70°C
Power rating	24 VDC (18 - 30 VDC)
Protection level	IP 66/67
Ex rating	Ex db IIC T6...T5 Gb (RI type) Ex db IIC T5...T4 Gb (NC type)

2. DOCUMENTS AND DRAWINGS :

- Gas Detector with Signal Converter SD-3 Series Datasheet, No. PC2E-0371-230605.
- Gas Detector with Signal Converter SD-3 Series Technical Manual, No. PT2E-379 rev.1, dated 08-10-2025.
- Drawings of MODEL SD-3 and Remote Sensor Head Rev.22, dated 30-06-2025.
- EU-Type Examination certificate, No. FM22ATEX0019X, dated 09-01-2025.
- EU-Type Examination certificate, No. DEKRA 24ATEX0017X issue 2, dated 06-07-2025.

3. TEST REPORTS :**RIME:**

- Environmental Test Report No. 22-171(E), dated 26-08-2022.
- Environmental Test Report No. 22-225(E), dated 13-10-2022.
- Environmental Test Report No. 22-226(E), dated 13-10-2022.
- Environmental Test Report No. 22-238(E), dated 05-10-2022.
- Environmental Test Report No. 22-239(E), dated 05-10-2022.
- Environmental Test Report No. 23-394(E), dated 14-11-2023.

JQA:

- IEC 60529 test report No. 382-200046-1, dated 30-10-2020.
- IEC 60529 test report No. 382-200046-2, dated 30-10-2020.
- EMC Test Report No. 400-200053-1, dated 24-02-2022.
- EMC Test Report No. 400-200053-2, dated 24-02-2022.
- EMC Test Report No. 400-200053-3, dated 24-02-2022.
- EMC Test Report No. 400-200053-6, dated 25-02-2022.
- EMC Test Report No. 400-220021-1R, dated 29-06-2022.
- EMC Test Report No. 400-220021-2R, dated 29-06-2022.

Chemitox:

- Salt mist Test Report No. 221018-2, dated 01-09-2023.

DEKRA:

- Test Report No. 41500225P, date 16-07-2025.
- IEC 60079-1 test report No. NL/DEK/ExTR24.0018/01, dated 22-08-2024.
- IEC 60079-0 test report No. NL/DEK/ExTR24.0018/02, dated 06-07-2025.

4. APPLICATION / LIMITATION :

- 4.1 - As per Requirements of International instruments stated on the front page of this certificate.
- 4.2 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.
- 4.3 - EN 50104, IMO MSC.1/Circ.1370 are not applicable to the above products, they are not for detection and measurement of oxygen.
- 4.4 - Ex certification is not covered by this certificate, Applications in hazardous areas are to be approved in each case according to the International instruments and Conditions for Safe Use specified in a valid Ex-Certificate issued by a Notified or Recognised Certification Body.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - This certificate alone does not allow the applicant to issue the Declaration of Conformity and to affix the mark of conformity (wheelmark) to the products corresponding to this type. To this end, the production-control phase module D Production Quality Assurance or module E Product Quality Assurance or module F Product Verification of Annex II of the Directive is to be complied with and controlled by a written inspection agreement with a Notified Body.
- 5.2 - For information concerning the production phase modules, **RIKEN KEIKI Co., Ltd.** has declared the following manufacturing site(s):

RIKEN KEIKI Co., Ltd.
2-3, Minamisakae-cho, Kasukabe-shi,
SAITAMA, 344-0057,
JAPAN

6. MARKING OF PRODUCT :

Reference is made to MED 2014/90/EU chapter 2.

In particular Article 10.3 specifies that the wheelmark shall be followed by the identification number of the Notified Body involved in the production control phase (module D, E or F) and by the year in which the mark is affixed (4 digits or last 2 digits).

7. OTHERS:

It is **RIKEN KEIKI Co., Ltd.** 's responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***