

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00004SY
Revision No:
3

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

that the Fixed oxygen analysis and/or gas detection equipment: category 3: (explosive gas atmospheres)

with type designation(s)
[SD-1OX/1DOX], [SD-1RI/1DRI], [SD-1RI-T]

issued to

RIKEN KEIKI Co., Ltd.
Itabashi-ku, Tokyo, Japan

is found to comply with the requirements in the following Regulations/Standards:
Regulation (EU) 2023/1667,
item No. MED/3.54b SOLAS 74 as amended, Regulation II-2/4 & VI/3 and FSS Code 15

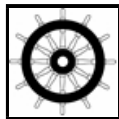
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-06-18**.

Issued at **Hamburg** on **2024-07-11**

DNV local unit:
Japan CMC

Approval Engineer:
Dariusz Lesniewski



Notified Body
No.: **0098**



for **DNV SE**

Digitally Signed By:
Christine Mydlak-Röder
Location: DNV Hamburg,
Germany

Mydlak-Röder, Christine
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV SE of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

Main technical data

[SD-1OX & 1DOX] (D type for force aspiration)

Measuring component: O₂
Measuring range: 0-25 Vol%
Indicator: local LED display
Output: 4-20 mA
Power: DC 24 V (1.1W)
Operating conditions: -20 to 40°C, below 95% RF
Dimensions: 148x208x88mm (SD-1OX); 148x205(223)x88mm (SD-1DOX)
Weight: 2.5 kg (SD-1OX); 2.9 kg (SD-1DOX)
Ingress proof rating: IP65
ATEX cable gland M20x1.5, M25x1.5, G3/4, 1/2-14NPT, 3/4-14NPT

[SD-1RI & 1DRI] (D type for force aspiration)

Measuring component: methane, propane, isobutane
Measuring range: 0-100% LEL & vol% (CH₄)
Indicator: local LED display
Output: 4-20 mA
Power: DC 24 V (2W)
Operating conditions: -20 to 60°C, below 95% RF
Dimensions: 148x149x88 mm (SD-1RI); 148x159(177)x88mm (SD-1DRI)
Weight: 2.0 kg (SD-1RI); 2.2 kg (SD-1DRI);
Ingress proof rating: IP65
ATEX cable gland M20x1.5, M25x1.5, G3/4, 1/2-14NPT, 3/4-14NPT

[SD-1RI-T]

Measuring component: methane, propane, isobutane
Measuring range: 0-100% LEL & vol% (CH₄)
Indicator: local LED display
Output: 4-20 mA
Power: DC 24 V (2W)
Operating conditions: -20 to 60°C, below 95% RF
Dimensions: 235x231x235 mm & 265x231x265 mm
Weight: 8.0 kg / 9.8 kg
Ingress proof rating: IP66
ATEX cable gland M20x1.5, M25x1.5, G3/4, 1/2-14NPT, 3/4-14NPT

Place of manufacture

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

RIKEN KEIKI NARA MFG. Co., Ltd.
49-1 Abe, Sakurai-shi, Nara 633-0054 Japan

Application/Limitation

- The equipment is compliant with following DNV Location Classess and Application:
 - EMC-A : installation suitable except for Bridge zone (*IEC 60092-504 (2016) table 1 item 19-20*)
 - Enclosure: (IP65 for SD-1OX & 1DOX & SD-1RI & 1DRI)
(Location according *ref. IEC 60529/AMD2:2013*. Not suitable for open deck)
 - Enclosure: (IP66 for SD-1RI-T)
(Location according *ref. IEC 60529/AMD2:2013*. Suitable for open deck)
 - Vib-A : General applications (*ref. IEC 60092-504 (2016) table 1 item 10*)
 - Temp-D : Location (-20°C to +60°C) (*ref. IEC 60092-504 (2016) table 1 item 6-7*),
high temp. limited to +65°C due to EX-classification
- Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV.
- Each equipment delivery to be provided with installation and user manual.

Information on Ex-Certification received from manufacturer – Not verified by DNV

Equipment	Certified	Certificate No.
SD-1OX, SD-1DOX	II 2 G Ex db IIC T6 Gb, -20°C ≤ Ta ≤ +60°C	DEKRA 13ATEX0035 X
SD-1RI, SD-1DRI	II 2 G Ex db IIC T6 Gb, -20°C ≤ Ta ≤ +60°C	DEKRA 24ATEX0004X
SD-1RI-T	II 2 G Ex db IIC T6 Gb, -20°C ≤ Ta ≤ +60°C	DEKRA 24ATEX0005X

Type Examination documentation

GJR-576_RIKEN KEIKI dated 2019.07.18/08.08.2019 List of test reports:

SD-1RI,-1DRI, -1OX, -1DOX	IEC60529	[File No-19-011(E)]
SD-1RI,-1DRI, -1OX, -1DOX	IEC60068-2-1, -2, -30	[File No-19-077(E)]
SD-1RI,-1DRI, -1OX, -1DOX		[Report No-GJR-608]
SD-1RI,-1DRI	IEC60092-504, 60533	[File No-400-180099]
SD-1OX, -1DOX	IEC60092-504, 60533	[File No-400-180100]
SD-1RI,1DRI	IEC60068-2-6	[File No-19-082(E)]
SD-1OX,1DOX	IEC60068-2-6	[File No-19-081(E)]
SD-1RI,1DRI	EN60079-29-1	[File No-41500919P]
SD-1RI,1DRI	EN50271	[File No-320-16264T]
SD-1OX,1DOX	EN50271	[File No-320-16262T]
SD-1OX,1DOX	IEC60068-2-52	[File No-190204-2-1]
SD-1RI, SD-1DRI	IEC60068-2-52	[File No-190204-2-2]
SD-1OX,1DOX	EN50104	[File No-41501019P]

EU type examination certificates:

SD-1OX, -1DOX : DEKRA 13ATEX0035X Issue 6 / EN_IEC_60079-0_2018
 SD-1RI, -1DRI : PREASAFE 20ATEX 63097X Issue 0 / EN_IEC_60079-0_2018
 SD-1RI-T : PREASAFE 20ATEX 63461X Issue 0 / EN_IEC_60079-0_2018

NCERT-TTR-728002 Rev.0_RIKEN KEIKI dated 2020.11.13 List of test reports:

SD-1RI-T	IEC60529	[File No. 20-150(E)]
SD-1RI-T		[File No. 382-160045-1]
SD-1RI-T	IEC60068-2-1.-2.-30	[File No. 19-078(E)]
SD-1RI-T	IEC60092-504	[File No. 20-155(E)]
SD-1RI-T	IEC60092-504	[File No. 20-170(E)]
SD-1RI-T	IEC60079-29-1	[File No. 20-274(E)]
SD-1RI-T	IEC60092-504. 60533	[File No. 400-2000052]
SD-1RI-T	IEC60079-29-1	[File No. 400-2000052]
SD-1RI-T	IEC60068-2-52	[File No. 190204-2-3]

Update/Renewal 2024:

EU type examination certificates :

SD-1OX, -1DOX : DEKRA 13ATEX0035X Issue 8 / EN_IEC_60079-0_2018 / EN 60079-1:2014
 SD-1RI, -1DRI : DEKRA 24ATEX0004X Issue 0 / EN IEC 60079-0:2018 / EN 60079-1:2014
 SD-1RI-T : DEKRA 24ATEX0005X Issue 0 / EN IEC 60079-0:2018 / EN 60079-1:2014

Test reports:

Type Test Report for EC Type Examination Doc. No. MM-MCC_2280321_TTR_Rev.0 (2024-June-05)
 Test Report No. 41501019PNII (2024-May-28)
 Test Report No. 41501019PNIII (2024-May-28)
 Test Report No. 400-220058 (2022-July-11)
 IECEx Test Report NL/DEK/ExTR13.0003/07 (2024-April-26)
 IECEx Test Report NL/DEK/ExTR24.0005/00 (2024-Feb.-26)
 Test Report 400-220203 (2023-February-20)
 Test Report 400-220202 (2023-February-20)
 Test Report 400-220058 (2022-July-11)

Operating manuals:

SD-1OX Operating Manual (PT2E-177)
 SD-1RI Operating Manual (PT2E-195)
 SD-1DRI Operating Manual (PT2E-196)
 SD-1RI-T Operating Manual (PT2-189) (PT2E-189)
 SD-1DOX Operating Manual (PT2E-179)

Tests carried out

IEC 60092-504:2016	->	[SD-1OX/1DOX] & [SD-1RI/1DRI] & [SD-1RI-T]
IEC 60533:2015	->	[SD-1OX/1DOX] & [SD-1RI/1DRI] & [SD-1RI-T]
<i>Category 3: (explosive gas atmospheres),</i>		
EN 50104:2019	->	[SD-1OX/1DOX]
EN IEC 60079-0:2018 incl. AC:2020	->	[SD-1OX/1DOX] & [SD-1RI/1DRI] & [SD-1RI-T]
EN 60079-29-1:2016	->	[SD-1RI/1DRI] & [SD-1RI-T]

Marking of product

For identification to this type examination certificate the products shall be marked with:

- Manufacturer's name or trade mark
- Type designation
- Mark of Conformity (see front page)

END OF CERTIFICATE