



CERTIFICATE NUMBER	24-2476392-1-PDA
EFFECTIVE DATE	28-Mar-2024
EXPIRY DATE	15-Jan-2029
ABS TECHNICAL OFFICE	Houston ESD - Electrical

## CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

### **RKI INSTRUMENTS, INC.**

located at

**33248 CENTRAL AVE., , UNION CITY, CA, United States, 94587**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product:** Gas Monitor  
**Model:** LEL Sensors: 61-0140RK, 61-1000RK, 65-2400RK, 65-2400RK-05, 65-2640RK, 65-2640RK-05, 65-2649RK-CH4, 65-2649RK-HC, 65-2640XL, 65-2640XL-05, 65-2649XL-CH4, 65-2649XL-HC  
**Endorsements:**  
**Tier:** 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 15/Jan/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

*Soheni Haque*

Soheni Haque, Sr. Managing Principal Engineer

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**RKI INSTRUMENTS, INC.**

33248 CENTRAL AVE.

UNION CITY CA

United States 94587

Telephone: 800-754-5165

Fax: 510-441-5650

Email: orders@rkiinstruments.com

Web: www.rkiinstruments.com

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**Product:** Gas Monitor

**Model:** LEL Sensors: 61-0140RK, 61-1000RK, 65-2400RK, 65-2400RK-05, 65-2640RK, 65-2640RK-05, 65-2649RK-CH4, 65-2649RK-HC, 65-2640XL, 65-2640XL-05, 65-2649XL-CH4, 65-2649XL-HC

**Endorsements:**

**Intended Service:**

Marine & Offshore Application - Flammable Gas detection sensors for use in gas detection and alarm systems on Ships and Offshore Installations.

**Description:**

Direct Connect Sensor: 61-0140RK

Direct Connect Sensor with Junction Box: 61-1000RK

"S" Series Sensor: 65-2400RK, 65-2400RK-05

M2A Series with Catalytic Sensor: 65-2640RK, 65-2640RK-05

M2A Series with IR sensor: 65-2649RK-CH4, 65-2649RK-HC

M2A-XL Series with Catalytic Sensor: 65-2640XL, 65-2640XL-05

M2A-XL Series with IR Sensor: 65-2649XL-CH4, 65-2649XL-HC

**Rating:**

Model 61-0140RK - UL Report E180083

Combustible Gas detectors with explosion proof enclosure suitable for Class I, Division 1, Groups B, C & D atmospheres.

Measuring Range: 0 to 100% LEL

Operating Voltage: 10-30Vdc

Temperature: -40 °C to 75 °C

Temperature Code: T6

Models 61-1000RK, 65-2400RK, 65-2400RK-05, 65-2640RK, 65-2640RK-05, 65-2640XL and 65-2640XL-05 consist of Sensor Model 61-0140RK which is mounted in UL/CSA approved explosion proof enclosure.

Models 65-2649RK-CH4, 65-2649RK-HC, 65-2649XL-CH4, and 65-2649XL-HC consist of Infrared sensor approved in the model 61-1003RK assembly (UL Report No E253828), which is mounted in UL/CSA approved explosion proof enclosure.

Measuring Range: 0 to 100% LEL

Operating Voltage: 10-30Vdc

Temperature: -20 °C to 50 °C

Temperature Code: T6

**Service Restriction:**

1) Unit Certification is not required for this product. 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.

2) Combustible gas detectors are to be tested and certified to performance requirement in accordance with recognized standards by independent third party laboratory for use in floating offshore production platforms, LNG carriers and vessels using gases or other low-Flashpoint fuels.

**Comments:**

1) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

2) The sensor installation on board is to be in accordance to the manufacturer's manual and to the satisfaction of the attending Surveyor/owner's representative.

3) The calibration accessories suitable for the type of gas detectors are to be available on board.

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4) The sensor calibration and calibration frequency are to be in accordance to the manufacturer's manual.

**Notes/Drawing/Documentation:**

Drawing No. CSA Certificate 1750685, CSA Hazardous Location Certificate - OUTLET BOXES AND FITTINGS, Revision: -, Pages: 1

Drawing No. CSA Certificate 70056548, CSA Hazardous Location Certificate - SIGNAL APPLIANCES, Revision: -, Pages: 1

Drawing No. CSA REPORT: 70056548, DESCRIPTIVE REPORT, Revision: 5, Pages: 40

Drawing No. M2A-XL Transmitter, M2A-XL Transmitter Operator's Manual, Revision: C, Pages: 103

Drawing No. M2A-XL\_brochure, M2A-XL STAND ALONE TRANSMITTER - PRODUCT DATA SHEET, Revision: -, Pages: 4

Drawing No. Direct Connect Brochure Print FO20-2012, Revision: -, Pages: 2

Drawing No. M2A Stand Alone Transmitter FO22-2012 Data sheet, Revision: -, Pages: 4

Drawing No. M2A Transmitter Manual Rev X, Revision: -, Pages: 101

Drawing No. S2\_Brochure FO26-2012 Explosion Proof Gas Sensor/Transmitter: S Series, Revision: -, Pages: 4

CSA Certificate 013046, Crouse Hinds Outlet Boxes and Fittings, Pages: 4

UL Certificate E96342, Crouse Hinds Enclosures, Pages: 1

CSA File No.: 011716 C 000 (dated 28 Feb 2003)

UL File E180083 dated 20 June 1995, Revised 08 Feb 20016, Pages: 3

UL File E253828, dated 29 Aug 2005, Pages: 1

UL File E253828 Report, dated 29 Aug 2005, Pages: 16

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate remains valid until 15/Jan/2029 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

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**STANDARDS****ABS Rules:**

Rules for Conditions of Classification, Part 1: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2024 Marine Vessel Rules: 4-8-3/1.11.1, 4-8-3/Table 2, 4-8-4/27, 5C-1-7/17.7, 5C-1-7/25.33

Rules for Conditions of Classification, Part 1 - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2024 Mobile Offshore Units: 4-3-1/11, 4-3-1/15, 4-3-1/17.1, 4-3-3/9.3

**National:**

UL Standard 1203 (Third Edition), Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for use in Hazardous (Classified) Locations

UL Standard 61010-1 (Second Edition), Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements

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CSA C22.2 No. 0-10 (2015) General Requirements - Canadian Electrical Code, Part II.

C22.2 No. 30-M1986 (2012), Explosion-Proof Enclosures for Use in Class I Hazardous Locations

**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA