



CERTIFICATE NUMBER  
19-HS1815387-PDA

DATE  
17 Jan 2019

ABS TECHNICAL OFFICE  
Houston ESD - Offshore  
Equipment

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## CERTIFICATE OF Design Assessment

This is to certify that a representative of this Bureau did, at the request of  
**RKI INSTRUMENTS, INC.**

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**

This Product Design Assessment (PDA) Certificate 19-HS1815387-PDA, dated 17/Jan/2019 remains valid until 16/Jan/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.

AMERICAN BUREAU OF SHIPPING

*Daniel Hyun SON*

Hyun Young Son  
Engineer/Consultant

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 the terms and conditions as contained in ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

## **RKI INSTRUMENTS**

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Web: rkiinstruments.com

**Tier: 3 - Type Approved, unit certification not required**

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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

**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

**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 consist of Sensor Model 61-0140RK which is mounted in UL/CSA approved explosion proof enclosure.

Models 65-2649RK-CH4, 65-2649RK-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.
- 4) The sensor calibration and calibration frequency are to be in accordance to the manufacturer's manual.

**Notes/Drawing/Documentation:**

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

Document No. FO201-1608, Direct Connect Sensors Data sheet, Pages: 4

Document No. FOF015-0702, Explosion Proof Gas Sensor/Transmitter: S Series Data sheet, Pages: 2

Document No. FO22-1809/1000, M2A Stand Alone Transmitter Data sheet, Pages: 4

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UL Certificate E96342, Crouse Hinds Enclosures, Pages: 1  
Document No. 71-0305RK, M2A Transmitter Operator's Manual, Revision: C, dated 9/8/2015, Pages: 75  
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:**

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#### **STANDARDS**

##### **ABS Rules:**

2019 Rules for Conditions of Classification, Part 1: 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:  
2019 Steel Vessels: 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  
2019 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  
2019 Steel Vessels Under 90 Meters (295 Feet) in Length 4-6-3/3.1.1(a), 4-6-3/Table 1, 4-6-3/11.1.1  
2019 Offshore Support Vessels 4-8-3/1.11.1, 4-8-3/Table 2, 4-8-4/29.1

2019 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:

2019 Mobile Offshore Drilling Units: 4-3-3/3.1.1(a), 4-3-3/9.1.1, 5-2-5/3  
2019 Mobile Offshore Units: 4-3-3/3.1.1(a), 4-3-3/9.1.1, 8-2-1/11.11

##### **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

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

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**EUMED:**

NA

**OTHERS:**

NA