



CERTIFICATE NUMBER
19-HS1815389-PDA

DATE
17 Jan 2019

ABS TECHNICAL OFFICE
Houston ESD - Offshore
Equipment

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 Detector**

Model: **Hydrogen Sulfide (H₂S) Sensors: 65-2428, 65-2427RK-05, 65-2422RK-05 & 65-2645RK-05**

This Product Design Assessment (PDA) Certificate 19-HS1815389-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 standard. 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-A5/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010).

RKI INSTRUMENTS

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United States 94587

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Tier: 3 - Type Approved, unit certification not required

Product: Gas Detector**Model: Hydrogen Sulfide (H2S) Sensors: 65-2428, 65-2427RK-05, 65-2422RK-05 & 65-2645RK-05****Intended Service:**

Marine & Offshore Application - Hydrogen Sulfide detectors for use in gas detection and alarm systems on ships and offshore installations.

Description:

Direct Connect Sensor without junction box: 65-2428

Direct Connect Sensor with Junction Box: 65-2427RK-05

"S" Series Sensor: 65-2422RK-05

M2A Series Sensor: 65-2645RK-05

Rating:

Model 65-2428 H2S Sensor - CSA Certificate 70056548 (108338_0_000)

Permanently mounted with Terminal housing suitable for Class I, Div. 1, Groups B, C and D

Rated 8-30Vdc @ 3.0mA

Measuring Range: 0 to 100 ppm

Operating Temperature: -40°C to 40°C

Temperature Code: T6

Models 65-2427RK-05, 65-2422RK-05 & 65-2645RK-05 consists of Sensor 65-2428 which is mounted in a CSA/UL approved explosion proof enclosure

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) 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:

Hydrogen Sulfide Detector 65-2428 Operator's manual, Revision: P1, Pages: 16

CSA Certificate of Compliance 70056548 (108338_0_000), Project 70056548, Issued Date: 27 May 2016, Pages: 4

CSA Descriptive Report Project 70056548, Issued Date: 27 May 2016, Pages: 27

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

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

UL Certificate E96342, Crouse Hinds Enclosures, Pages: 1

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

Document No.: FO22-1809/1000: M2A Transmitter Operator's Manual, Revision: C, Pages: 75

Terms of Validity:

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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:

2019 Steel Vessels: 4-8-3/1.11.1, 4-8-3/Table 2, 4-8-4/27

2019 Marine Vessels: 4-8-3/1.11.1, 4-8-3/Table 2, 4-8-4/27

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

Rules for Conditions of Classification, Part 1 - 2019 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, 5-2-5/5

2019 Mobile Offshore Units: 4-3-3/3.1.1(a), 4-3-3/9.1.1, 8-2-1/11.13

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

EUMED:**OTHERS:**

NA