



CERTIFICATE NUMBER  
15-HS1399406-1-PDA-DUP

DATE  
16 Feb 2018

ABS TECHNICAL OFFICE  
Houston ESD - Piping

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## CERTIFICATE OF Design Assessment

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

### **RAE SYSTEMS (SHANGHAI) 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: **GasAlert Extreme series: GAXT-H, GAXT-H2, GAXT-M, GAXT-M2, GAXT-S, GAXT-C, GAXT-Z, GAXT-D, GAXT-A, GAXT-A2, GAXT-P, GAXT-X, GAXT-E, GAXT-N, GAXT-V, GAXT-G.**

This Product Design Assessment (PDA) Certificate 15-HS1399406-1-PDA-DUP, dated 16/Feb/2018 remains valid until 03/Aug/2020 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

Tim Kimble  
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).

**RAE SYSTEMS (SHANGHAI) INC.**

NO 990 E HUIWANG ROAD

SHANGHAI JIADING DISTRICT

China 201815

Telephone: 45 24499155

Fax: 0086 21 69522602

Email: detectgas@honeywell.com

Web: www.raesystems.com

**Tier: 2 - PDA Issued**

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**Product:** Gas Detector

**Model:** GasAlert Extreme series: GAXT-H, GAXT-H2, GAXT-M, GAXT-M2, GAXT-S, GAXT-C, GAXT-Z, GAXT-D, GAXT-A, GAXT-A2, GAXT-P, GAXT-X, GAXT-E, GAXT-N, GAXT-V, GAXT-G.

**Intended Service:**

Marine & Offshore Application - Portable Single Gas Detector

**Description:**

The GasAlert Extreme is an intrinsically safe, portable, disposable, battery operated, single gas detector intended for detection of hydrogen sulphide, low methanol hydrogen sulphide, carbon monoxide, carbon monoxide (low hydrogen sensitivity), sulfur dioxide, chlorine, hydrogen cyanide, nitrogen dioxide, ammonia, high range ammonia, phosphine, oxygen depletion, ethylene, nitric oxide, chlorine dioxide, and ozone. The device contains audible and visual alarms that are activated when conditions exceeds preset limits.

**Rating:**

Intrinsic Safety:

IECEX: Ex ia IIC T4 Ga,

ATEX: II 1G Ex ia IIC T4 Ga

UL: Class I Group A, B, C, D and Class II, Groups E, F, G

Intrinsically safe operating temperature: -40°C to +50°C (-40°F to +122°F)

Operating Temperature, sensor-specific:

H<sub>2</sub>S, SO<sub>2</sub> & HCN: -40°C to +50°C (-40°F to +122°F)

CO: -30°C to +50°C (-22°F to +122°F)

NH<sub>3</sub>: (high range): -20°C to +40 °C (-4°F to +104°F)

Other Gases: -20°C to +50°C (-4°F to +122°F)

Operating Humidity:

CO, H<sub>2</sub>S, SO<sub>2</sub>, HCN, NO<sub>2</sub>, NH<sub>3</sub>, PH<sub>3</sub>, ETO, NO, O<sub>3</sub>: 15% to 90%

CL<sub>2</sub>: 10% to 95%

CLO<sub>2</sub>: 15% to 95%

O<sub>2</sub>: 0% to 99%

Battery: One 3.0V Lithium Panasonic CR-2PE/BN

For more details see attached specification

**Service Restriction:**

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.

**Comments:**

Duplicate PDA resides with RAE SYSTEMS (SHANGHAI) INC. (WCN 444534) - CHINA.

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

- The battery must be replaced in a non-hazardous location in accordance with the manufacturer's instructions. Only the Panasonic Part No. CR-2PE/BN 3V primary Lithium cell may be used.
- To be used in accordance with Quick Reference Guide 50105442-061 EN-L1
- Does not meet the Performance requirements for Combustible Gas Detectors in ANSI/ISA S12.13.

**Notes/Drawing/Documentation:**

Supporting Documents in ABS Task T1714377:

Drawing No. GAXW-01E, GasAlert Extreme Project File, Revision: E, Pages: 4

Drawing No. 50105442-061 QRG-EN-GAXT-L1, Quick Reference Guide, Revision:-, Pages: 24

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Drawing No. 50112194-238, GXUA-17 C GA EXTREME LABEL CHINA, Revision: C, Pages: 1

Drawing No. 50112194-213, GXUA-15 B GA EXTREME CERTIFICATION LABEL, Revision: B, Pages: 1

Drawing No. DEMKO 04 ATEX 0336363X, EU-TYPE EXAMINATION CERTIFICATE, Revision: -, Pages: 2,  
Date: 06-29-2017

Drawing No. E131021-20170629, UL Certificate of Compliance, Revision: -, Pages: 2, Date: 06-29-2017

Drawing No. IECEx UL 08 0001X Issue 8 50118920-003, IECEx Certificate of Conformity, Revision: -, Pages: 4,  
Date: 06-29-2017

Drawing No. US/UL/ExTR08.0002/08, IECEx TEST REPORT, Revision: -, Pages: 10, Date: 06-29-2017

**Existing Supporting Documents:**

Drawing No. 50105442-061 QRG-EN-GAXT-L1, Gas Alert Extreme Single Gas Detector, Revision: -, Pages: 1

Drawing No. 50112194-213, GXUA-15 B GA EXTREME CERTIFICATION LABEL, Revision: B, Pages: 1

Drawing No. 50112194-238, GXUA-17 C GA EXTREME LABEL CHINA, Revision: C, Pages: 1

Drawing No. DEMKO 04 ATEX 0336363X, EU-TYPE EXAMINATION CERTIFICATE, Revision: 7, Pages: 1

Drawing No. E131021-20170629 UL CoC 50118920-059, CERTIFICATE OF COMPLIANCE, Revision: -, Pages: 1

Drawing No. GAXW-01E, GasAlert Extreme Project File, Revision: E, Pages: 1

Drawing No. IECEx UL 08 0001X Issue 8 50118920-003, IECEx Certificate of Conformity, Revision: -, Pages: 1

Drawing No. Request for Duplicated PDA Att P TWZ-017-03-P01-W002, Request for Duplicated PDA, Revision: 0,  
Pages: 1

Drawing No. US UL ExTR 08 0002 08 Report Package, IECEx TEST REPORT, Revision: -, Pages: 1

**Terms of Validity:**

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**STANDARDS**

**ABS Rules:**

Rules for Conditions of Classification, Part 1 2018 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

2018 Steel Vessel 4-8-4/27, 4-8-3/13, 5-1-7/17.7, 5-1-7/31.9 & 5-1-7/Table 1;

Rules for Conditions of Classification, Part 1 - 2018 Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

2018 Mobile Offshore Drilling Units 4-3-1/15, 17.1, 4-3-3/9.1.2;

**National:**

UL 913 8th Edition, UL Standard for Safety Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, and III, Division 1, Hazardous (Classified) Locations

**International:**

IEC 60079-0:2011, Explosive atmospheres - Part 0: Equipment - General requirements

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IEC 60079-11:2011, Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

EN 60079-0:2012+A11:2013, Explosive atmospheres. Equipment. General requirements

EN 60079-11:2012, Explosive atmospheres. Equipment protection by intrinsic safety "i"

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA