



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx BAS 14.0031X** Page 1 of 5 Certificate history:
Status: **Current** Issue No: 2 [Issue 1 \(2018-05-11\)](#)
[Issue 0 \(2014-11-07\)](#)
Date of Issue: 2019-11-14
Applicant: **Guided Ultrasonics Limited**
Wavemaker House
3 Brentwaters Business Park
The Ham, Brentford, TW8 8HQ
United Kingdom
Equipment: **gPIMS Sensor Type R2P-^{**in-EX-^{**mm}} & Type M R2P-^{**in-EX-^{**mm}}**
Optional accessory:
Type of Protection: **Intrinsic Safety**
Marking: **Ex ia IIB T4...T3 Ga – gPIMS Type R2P-^{**in-EX-^{**mm}} Models – See Certificate Schedule for full Marking**
Ex ia IIB T4 Ga (-40°C ≤ Ta ≤ +85°C) – Type M R2P-^{in-EX-^{**mm}} Models**

Approved for issue on behalf of the IECEx
Certification Body:

R. Sinclair

Position:

Technical Manager

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom





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Manufacturer: **Guided Ultrasonics Limited**
Wavemaker House
3 Brentwaters Business Park
The Ham
Brentford
TW8 8HQ
United Kingdom

Manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

[IEC 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "I"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

[GB/BAS/ExTR13.0141/00](#)

[GB/BAS/ExTR19.0222/00](#)

Quality Assessment Report:

[GB/BAS/QAR14.0014/03](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The gPIMS Sensor Type R2P-**-in-EX-**-mm & Type M R2P-**-in-EX-**-mm (** represents numeric type number related to the size of the sensor) are permanently installed monitoring system which utilises ultrasonic guide waves, sent along the length of a pipe, to non-destructively test pipes for defects or other pipe features by detecting changes in the cross section and/or stiffness of the pipe.

The gPIMS Sensor Type R2P-**-in-EX-**-mm consist of a band, that is placed around the pipe which houses the piezo electric crystals, and a permanently attached cable up to 50m long. The band uses piezoelectric crystals to induce ultrasonic waves in to the pipe and uses the same crystals to listen for any reflected waves. The sensor is connected to the monitoring equipment via an interface located in the safe non-hazardous area.

The gPIMS Sensor Type R2P-**-in-EX-**-mm has the following Temperature Classification & associated ambient temperature ranges:

Ex ia IIB T4 Ga ($-40^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$)

Ex ia IIB T3 Ga ($-40^{\circ}\text{C} \leq T_a \leq +130^{\circ}\text{C}$)

gPIMS Sensor Type R2P-**-in-EX-**-mm Input Parameters

Signal Pins (A, B, Y, D, F, b, H, J, K, L, h, N, R, k, T, U) each w.r.t GND (W, X, r, Z, a, t, c, d, f, g, x, l, z, m, n)

$U_i = \pm 18\text{V}$ $C_i = 23\text{nF}$

$I_i = 127\text{mA}$ $L_i = 31\mu\text{H}$

$P_i = 569\text{mW}$

Logic Pins (BB, CC, DD, EE, GG, HH) combined w.r.t. GND (FF)

$U_i = 5.88\text{V}$ $C_i = 6.7\text{nF}$

$I_i = 143.4\text{mA}$ $L_i = 70\mu\text{H}$

$P_i = 208\text{mW}$

The gPIMS Sensor Type M R2P-**-in-EX-**-mm is of a similar construction to the Type R2P-**-in-EX-**-mm but is designed to be directly connected to a certified gPIMS Sampling Module Type M (IECEx SIR 18.0036X) in place of the integral cable. Due to the direct mounting of the gPIMS Sampling Module Type M, the gPIMS Sensor Type M R2P-**-in-EX-**-mm has the following temperature classification and ambient temperature range:

Ex ia IIB T4 Ga ($-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$)

gPIMS Sensor Type M R2P-**-in-EX-**-mm Input Parameters

Signal Pins each w.r.t GND

$U_i = 8.3\text{V}$ $C_i = 12\text{nF}$

$I_i = 503\text{mA}$ $L_i = 0$

$P_i = 1044\text{mW}$

Logic Pins combined w.r.t. GND

$U_i = 5.46\text{V}$ $C_i = 0$

$I_i = 143.4\text{mA}$ $L_i = 0$

$P_i = 196\text{mW}$

SPECIFIC CONDITIONS OF USE: YES as shown below:



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1. Care must be taken when installing the gPIMS sensor to ensure that it is protected from any situations that could cause a build-up of static charge. The gPIMS sensor must not be installed into locations in which it could come into contact with, through normal or abnormal circumstances, fast moving dust laden air/gas or non-conductive fluids. The gPIMS sensor must be cleaned only with a damp cloth.
2. The locking nut on the equipment connector is manufactured from aluminium alloy, this part of the equipment must be protected from impact or abrasion if located in an area classified Zone 0 or 1.
3. The gPIMS Sensor Type R2P-**-in-EX-**-mm models are suitable for T4 & T3 Temperature Classifications with different ambient temperature ranges. Refer to the Certificate Schedule for the full equipment marking.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Variation 2.1

To permit the removal of the integral cable to form the gPIMS Sensor Type M R2P-**-EX-**-mm. This variant is designed to be directly connected to the separately certified gPIMS Type M Sampling Module which is mounted to the sensor in place of the cable. This variant of the equipment has input parameters that correspond to the output parameters of the gPIMS Type M Sampling Module. The certification code for the gPIMS Sensor Type M R2P-**-EX-**-mm is: -

Ex ia IIB T4 Ga ($-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$)

The Equipment's Name, Certificate Schedule and Specific Conditions of Safe Use have been updated to include details of the new variant of the equipment and its associated marking and input parameters.

Variation 2.2

To permit the gPIMS Sensor Type R2P-**-EX-**-mm to be alternatively installed in an ambient temperature of up to 130°C . As a result of this, the equipment marking of these variants were revised to:

Ex ia IIB T4...T3 Ga

The Equipment's Certificate Schedule was updated to list the following full markings for the gPIMS Sensor Type R2P-**-EX-**-mm:

Ex ia IIB T4 Ga ($-40^{\circ}\text{C} \leq T_a \leq +90^{\circ}\text{C}$)

Ex ia IIB T3 Ga ($-40^{\circ}\text{C} \leq T_a \leq +130^{\circ}\text{C}$)

Variation 2.3

To permit minor circuit, input parameter and drawing changes not affecting the original assessment. As a result of the drawings changes, several of the original drawings were replaced by new drawings.

Variation 2.4

To confirm the current designs of the gPIMS Sensor Type R2P-**-EX-**-mm & Type M R2P-**-EX-**-mm have been reviewed against the requirements of IEC 60079-0: 2017 Edition 7 in respect of the differences from IEC 60079-0: 2011, and none of the differences affect the equipment.

ExTR: **GB/BAS/ExTR19.0222/00**

File Reference: **18/0278**