



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 18ATEX2102X** Issue: **3**

4 Equipment: **gPIMS Sampling Module**

5 Applicant: **Guided Ultrasonics Limited**

6 Address: **Wavemaker house
Brentwaters Business Park
The Ham
Brentford
Middlesex TW8 8HQ
UK**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018

EN 60079-11:2012

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 1G

Ex ia IIB T4 Ga

Ta = -40°C to +85°C

Project Number 80043294

Signed: J A May

Title: Director of Operations

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CSA Group Netherlands B.V.
Utrechtseweg 310,
6812 AR, Arnhem,
Netherlands



SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE

Sira 18ATEX2102X
Issue 3

13 DESCRIPTION OF EQUIPMENT

The gPIMS Sampling Module is fixed equipment, constructed as one of two options, Type C and Type M. The Type C module is permitted for use only with an Ex certified gPIMS Sensor Type R2P-****in-EX-****mm (Baseefa 14ATEX0067X) to obtain pipeline condition data. The module acts as a sensor driver, signal receiver and conditioner, and data transmitter/receiver. The Type M module plugs into the sensor which is attached to the outer surface of a pipeline. The module is comprised of 3 circuit boards, encapsulated in a single enclosure, with a multicore cable for power supply and data transfer. The Type C module is connected to the sensor by a multicore cable. The Type C module differs from the Type M by having a fourth encapsulated printed circuit board which acts as a connection adaptor for the multi-core cable.

The Type M enclosure is a non-metallic shell with metallic lid.

The Type C enclosure is stainless steel.

The gPIMS Sampling Module may be supplied by the following Ex certified associated apparatus:

Supply lines: G.M. International type PSD5201 Power Supply. (BVS 14 ATEX E 023 X)

RS485 data lines: G.M. International type D1061S isolating repeater ((DNV 04 ATEX 0199 and Presafe 16ATEX8917)

The gPIMS Sampling Module has the following entity parameters to permit the use of appropriately Ex certified associated apparatus for connection to non-hazardous areas:

Supply lines: $U_i = 21.5 \text{ V}$, $I_i = 604 \text{ mA}$, $P_i = 3243 \text{ mW}$, $L_i = 0$, $C_i = 0$

RS485 data lines: $U_i = 5.9 \text{ V}$, $I_i = 225 \text{ mA}$, $P_i = 0.206 \text{ W}$, $L_i = 0$, $C_i = 10 \mu\text{F}$

The intrinsically safe outputs are accessed via the 100-way connector. They are designed to be connected to a certified gPIMS sensor only. The entity parameters for Type M module are listed below :

Signal pins each w.r.t GND

$U_o = 8.3 \text{ V}$, $I_o = 503 \text{ mA}$, $P_o = 1.044 \text{ W}$, $C_o = 71.35 \mu\text{F}$, $L_o = 0.56 \text{ mH}$

Logic pins combined w.r.t GND

$U_o = 5.46 \text{ V}$, $I_o = 143.4 \text{ mA}$, $P_o = 0.196 \text{ W}$, $C_o = 987.42 \mu\text{F}$, $L_o = 6.9 \text{ mH}$

Variation 1 - This variation introduced the following changes:

- i. PCB layout and component changes (3 PCBs).
- ii. Input parameters are introduced into the product description.
- iii. Intrinsically safe output parameters have been introduced to enable connection of external approved sensor.
- iv. Modification to RS485 data lines entity parameter U_i increased to 5.9 V from 3.7 V.
- v. The modifications above have been reflected within changes to product description.
- vi. Modifications to Specific Conditions of Use.

Variation 2 - This variation introduced the following changes:

- i. Label drawings updated to correct the notified body number from '1180' to '0598'.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	11 December 2018	R70138240A	The release of the prime certificate.
1	09 September 2019	R8000052A	The introduction of Variation 1
2	15 October 2019	4088	Transfer of certificate Sira 18ATEX2102X from Sira Certification Service to CSA Group Netherlands B.V.
3	19 October 2020	R80043294A	The introduction of Variation 2.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

- 15.1 It is the responsibility of the installer and user to ensure that external sources of heating or cooling do not cause the equipment to operate outside its permitted ambient temperature range.
- 15.2 Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- 15.3 The gPIMS Sampling Module hazardous area sensor connection may only be connected to a gPIMS Sensor Type R2P-**in-EX-**mm (Baseefa 14 ATEX 0067X).
- 15.4 The gPIMS Sampling Module may only be connected to non-hazardous area via galvanically isolated associated apparatus.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

Certificate Annexe

Certificate Number: Sira 18ATEX2102X
 Equipment: gPIMS Sampling Module
 Applicant: Guided Ultrasonics Limited



Issue 0

Drawing number	Sheets	Rev.	Date (Sira stamp)	Description
GP-0585-00	1 to 2 of 2	09	07 Dec. 18	General assembly M-type
GP-0607-00	1 to 2 of 2	06	07 Dec. 18	General assembly C-type
GP-0612-00	1 of 1	01	07 Dec. 18	M-type label
GP-0613-00	1 of 1	02	07 Dec. 18	C-type label
-	1 to 5 of 5	2.8	12 Nov 18	PSU/RS485 PCB schematic
-	1 of 1	2.8	12 Nov 18	PSU/RS485 PCB BoM
-	1 of 1	2.2	12 Nov 18	PSU/RS485 PCB layer 1 overlay
-	1 of 1	2.2	12 Nov 18	PSU/RS485 PCB layer 1
-	1 of 1	2.2	12 Nov 18	PSU/RS485 PCB layer 2
-	1 of 1	2.2	12 Nov 18	PSU/RS485 PCB layer 2 overlay
-	1 of 1	2.2	12 Nov 18	PSU/RS485 PCB details
-	1 to 11 of 11	2.10	12 Nov 18	Core PCB schematic
-	1 to 3 of 3	2.10	12 Nov 18	Core PCB BoM
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 1 overlay
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 1
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 2
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 3
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 4
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 5
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 6
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 7
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 8
-	1 of 1	2.2	12 Nov 18	Core PCB Layer 8 overlay
-	1 of 1	2.2	12 Nov 18	Core PCB details
-	1 to 3 of 3	2.6	12 Nov 18	Mux/Sensor PCB schematic
-	1 of 1	2.6	12 Nov 18	Mux/Sensor PCB BoM Type C
-	1 of 1	2.6	12 Nov 18	Mux/Sensor PCB BoM Type M
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB layer 1 overlay
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB layer 1
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB layer 1
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB layer 1
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB layer 1 overlay
-	1 of 1	2.2	12 Nov 18	Mux/Sensor PCB details
-	1 of 1		12 Nov 18	Mux Type C adaptor PCB schematic
-	1 of 1		12 Nov 18	Mux Type C adaptor PCB layer 1
-	1 of 1		12 Nov 18	Mux Type C adaptor PCB layer 2
-	1 of 1		12 Nov 18	Mux Type C adaptor PCB layer 3
-	1 of 1		12 Nov 18	Mux Type C adaptor PCB layer 4

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
GP-0585-00	1 to 2	12	17 Jun 19	General assembly M-type

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Certificate Annexe

Certificate Number: Sira 18ATEX2102X
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 Applicant: Guided Ultrasonics Limited



Drawing	Sheets	Rev.	Date (Sira stamp)	Title
GP-0607-00	1 to 2	08	17 Jun 19	General assembly C-type
GP-0612-00	1 of 1	04	17 Jun 19	M-type label
GP-0613-00	1 of 1	05	17 Jun 19	C-type label
-	1 to 5	3.1	06 Jun 19	PSU/RS485 PCB Schematic
-	1 to 2	3.1	06 Jun 19	PSU/RS485 PCB BoM
-	1 of 1	3.0	06 Jun 19	PSU/RS485 PCB layer 1 overlay
-	1 of 1	3.0	06 Jun 19	PSU/RS485 PCB layer 1
-	1 of 1	3.0	06 Jun 19	PSU/RS485 PCB layer 2
-	1 of 1	3.0	06 Jun 19	PSU/RS485 PCB layer 2 overlay
-	1 of 1	3.0	06 Jun 19	PSU/RS485 PCB details
-	1 to 11	3.0	06 Jun 19	Core PCB Schematic
-	1 to 3	3.0	06 Jun 19	Core PCB BoM
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 1 overlay
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 1
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 2
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 3
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 4
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 5
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 6
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 7
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 8
-	1 of 1	3.0	06 Jun 19	Core PCB Layer 8 overlay
-	1 of 1	3.0	06 Jun 19	Core PCB details
-	1 to 3	3.0	06 Jun 19	Mux/Sensor PCB Schematic
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB BoM Type C
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB BoM Type M
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB layer 1 overlay
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB layer 1
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB layer 1
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB layer 1
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB layer 1 overlay
-	1 of 1	3.0	06 Jun 19	Mux/Sensor PCB details

Issue 2. No new drawings were introduced.

Issue 3.

Drawing	Sheets	Rev.	Date (Stamp)	Title
GP-0585-00	1 to 2	09	17 Sep 20	General assembly M-type
GP-0607-00	1 to 2	06	17 Sep 20	General assembly C-type
GP-0612-00	1 of 1	01	17 Sep 20	M-type label
GP-0613-00	1 of 1	02	17 Sep 20	C-type label

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