1 EU - TYPE EXAMINATION CERTIFICATE

2 Product or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU – Annex III

3	EU - Type Examination Certificate No.:	**TRAC09ATEX11225X (incorporating variation V1)**
4	Product:	**PZEHT Accelerometer**
5	Manufacturer:	**Sensonics Limited**
6	Address:	**North Bridge Road. Berkhamsted, Hertfordshire HP4 1EF, United Kingdom**

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

8 Element Materials Technology, Notified Body number 2812, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **16-0075-006001**.

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN60079-0:2006 **EN60079-11:2007** **EN60079-26:2007**

Except in respect of those requirements listed at section 18 of the schedule.

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

II 1 G Ex ia IIC T4, Amplifier T_{amb} = -30°C TO + 120°C

II 1 G Ex ia IIC T1..T6 X, Transducer T_{amb} = -30°C TO + 450°C

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.

S P Winsor, Certification Manager

Issue date: 2021-02-17

Element Materials Technology Rotterdam B.V.
Zekeringstraat 33, 1014 BV, Amsterdam, Netherlands
Registered in the Netherlands. Registered Office: PO Box 6854, 4802 HW, Breda, Netherlands
Company Reg No. 24170257

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER TRAC09ATEX11225X (incorporating variation V1)

15 Description of Product

The PZEHT Series Accelerometer is a range of vibration transducers that produce a signal proportional to acceleration. They are intended for use in harsh industrial environments. They are designed to operate from a supply voltage of 18-28Vdc through a suitably rated, ATEX approved, intrinsically safe barrier.

The PZEHT accelerometer is a robust, hermetically sealed instrument. The vibration transducer consists of a piezoelectric sensor housed in a metallic enclosure. This is attached to an integral cable which is connected to a charge amplifier unit which is also separately housed in a metallic enclosure. The transducer is fitted in a high temperature environment, such as a turbine, while the electronics in the charge amplifier is fitted in a lower temperature environment. The charge amplifier is supplied by a separately certified intrinsically safe barrier.

Electrical connections from the intrinsically safe barrier to the charge amplifier are made via a multi-pin connector.

The Parameters for Intrinsically Safe Connection are shown in the Special Conditions for Safe Use (section 17 below).

16 Test Report No. (as added for this issue of the certificate): N/A.

17 Specific Conditions of Use

1. For transducer, T classification is as follows:
   T6 – Ambient range will be limited to 85°C
   T5 - Ambient range will be limited to 100°C
   T4 - Ambient range will be limited to 135°C
   T3 - Ambient range will be limited to 200°C
   T2 - Ambient range will be limited to 300°C
   T1 - Ambient range will be limited to 450°C

2. The intrinsic safety parameters are:
   Ui=28V, Ii=119mA, Pi=0.83W, Ci=41nF, Li=0, barrier output impedance of 234.6Ω, Lo/Ro = 44µH/Ω
   Ui=26V, Ii=87mA, Pi=0.56W, Ci=41nF, Li=0, barrier output impedance of 300Ω, Lo/Ro = 64µH/Ω

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.

18 Essential Health and Safety Requirements (Directive Annex II)

In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.

19 Drawings and Documents

The list of controlled technical documentation is given in Appendix A to this schedule.

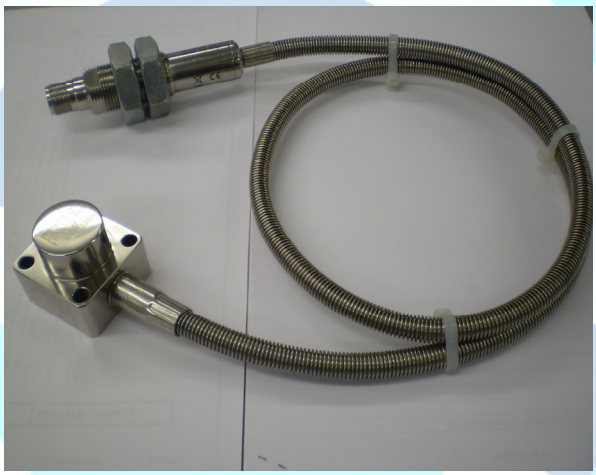
20 Routine Tests

None.

21 Specific Conditions for Manufacture

1. The total capacitance in the charge amplifier (C1-C7) shall not exceed 40nF including tolerances.
2. The capacitance of each piezo crystal in the transducer must be less than 100pF including tolerances.
3. The encapsulation used in the charge amplifier shall be to a minimum depth of 1mm above conductive parts.

22 Photographs



23 Details of Markings

Transducer element

Charge amplifier

24 Certificate History

Original certificate	2010-01-16	First issue.
Variation V1	2021-02-17	This certificate was originally issued by Notified Body number 0891 under Directive 2014/34/EU. The technical file has been transferred to Element Notified Body number 2812 without further assessment or evaluation

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations and amendments.

25 Notes to CE marking

In respect of CE Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Directives in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: NR-SNSQ-0005.

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Notified Body number 2812 is the designation for Element Materials Technology Rotterdam BV.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variation certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

(i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.

(ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

CERTIFICATE NUMBER TRAC09ATEX11225X (incorporating variation V1)

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
Artwork, Amplifier PCB	045/2078A	1	2009-06-05
Parts List, General Assembly	046/5836A	3	2009-11-24
Parts List, Amplifier PCB	046/5850A	4	2009-11-23
Circuit Diagram, Amplifier PCB	047/1730B	2	2009-06-06
General Assembly Drawing	EA3513B	3	2009-11-13
Component Layout, Amplifier PCB	EA3519A	1	2009-06-05
ATEX Handbook Required Content	OS803	3	2009-11-23
Electro Etch Stencil Artwork for PZEHT Charge Amplifier (ATEX Certified)	045/2092A	2	2021-02-15
Electro Etch Stencil Artwork for PZEHT Accelerometer (ATEX Certified)	045/2090A	2	2021-02-15