1 # EC TYPE EXAMINATION CERTIFICATE

2 Equipment or protective system intended for use in potentially explosive atmospheres – Directive 94/9/EC – Annex III

3 EC Type Examination Certificate No.: **TRAC09ATEX11225X**

4 Equipment: **PZEHT Accelerometer**

5 Manufacturer: **Sensonics Limited**

6 Address: **North Bridge Road. Berkhamsted, Hertfordshire HP4 1EF, United Kingdom**

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

8 TRaC EMC & Safety Ltd, Notified Body number 0891 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or protective system 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, with the exception of those listed in section 18 of the schedule to this certificate, has been assured by compliance with:

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

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions of safe use specified in the schedule to this certificate.

11 This EC-Type Examination certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of this equipment or protective system shall include the following:

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

⟨Ex⟩ **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 TRaC Ex Certification Scheme.

S.P. Winsor

S P Winsor, Certification Liaison Officer

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Form RF355 is13

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13 **SCHEDULE TO EC TYPE EXAMINATION CERTIFICATE**

14 **TRAC09ATEX11225X**

15 **General description of equipment or protective system included within the scope of this certificate**

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).

A list of controlled Manufacturer's Documents is given in Appendix A to this schedule.

16 **Test report No.:** **16-0075-006001**.

17 **Special conditions for safe 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

18 **Essential health and safety requirements**

Covered by application of the standards listed in section 9 of this certificate and the assessment conducted in the test report listed in section 16 of this certificate.

19 **Additional information (including special 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.

Photographs

Details of markings

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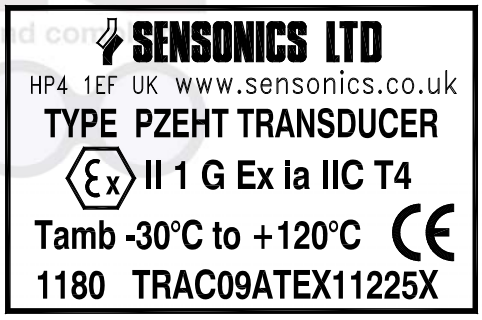
Transducer element



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Charge amplifier

Details of variations to this certificate

None.

Notes to CE marking

In respect of CE Marking, TRaC EMC & Safety Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

Notes to this certificate

TRaC certification reference: **15-0094-006001**.

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

APPENDIX A - LIST OF CONTROLLED MANUFACTURER'S 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