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.:	**TRL08ATEX11185X (incorporating variations V1 to V2)**
4	Product:	**Velocity Vibration Transducer- VEL/G & VEL/GT Series**
5	Manufacturer:	**Sensonics Ltd.,**
6	Address:	**Northbridge 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 **XU 1687/8977 & TRA-036383-33-00A**.

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

EN 60079-0:2006 **EN 60079-11:2007**

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:

Ex II 1 G Ex ia IIC T4 **Tamb= -30°C to + 100°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: 2021-02-12

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 TRL08ATEX11185X (incorporating variations V1 to V2)

15 Description of Product

The equipment is a range of velocity vibration transducers and there are 2 types evaluated, the VEL/G and VEL/GT with the difference being that the outer enclosure and connector types vary and the VEL/GT type has the option of an integral cable that allows connection, as shown in drawing EA3501C. The Geophone SM-6 velocity transducer sits inside both and generates a voltage signal internally from vibration. The transducer is manufactured as a moving coil and magnet housed inside a metallic enclosure. There are two pins which protrude from the centre for the electrical connection. A PCB houses critical 'is' components above the potted connection which limit energy. All parts are then housed in a metallic outer enclosure which is glued and welded shut.

The assessment was conducted with the following limiting parameters:

Natural Frequency ≤ 15 Hz	Coil Resistance ≥ 400 +/- 5%
Pk-Pk coil movement ≤ 4 mm	Resistor R3 ≥ 3K6 +/-5%
Sensitivity ≤ 80 +/- 5% V/m/s	Resistor R4 ≥ 390R +/- 5%

Compliance with intrinsic safety principles forms the basis of safety. The range of transducers permitted is defined by connection parameters.

Table of entity parameters	
Parameter	Channel 1
Uo	18.2 V
Io	7.6 mA
Po	138 mW
Ui	5.92 V
Ii	296 mA
Pi	0.45 W
Li	0
Ci	0

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

17 Specific Conditions of Use

1. ATEX approved isolation barrier or Zener barrier must be used at the interface between the hazardous area equipment and safe area equipment.

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

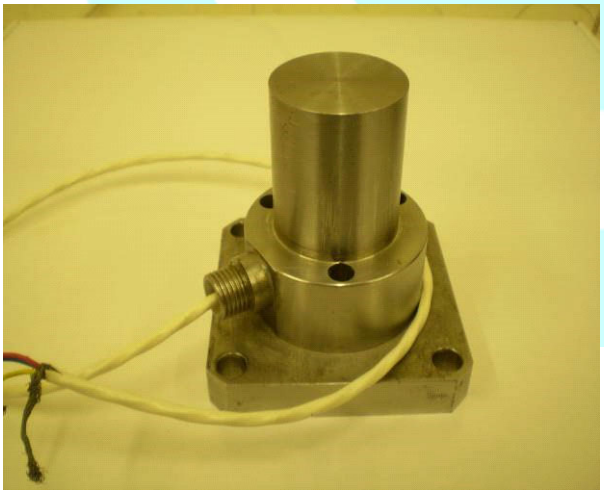
None.

22 Photographs

1. SM-6 Transducer Unit.

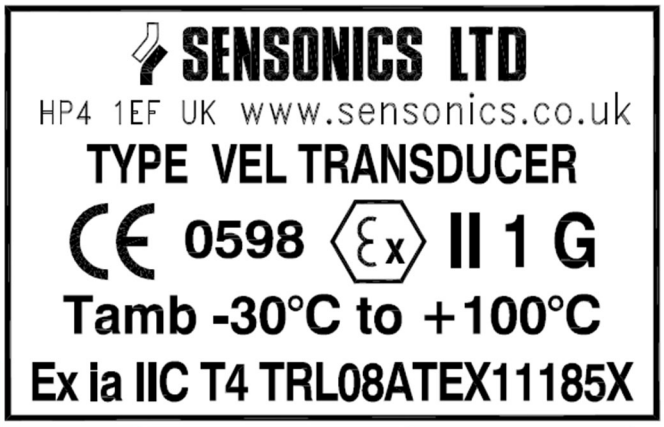
2. PCB on top.

3. VEL/G Series Transducer fully assembled.



4. VEL/G Series Transducer top view.

23 Details of Markings



24 Certificate History

Original certificate	2009-01-14	First issue.
Variation V1	2017-05-18	Ui, Ii, Pi, Ci and Li parameters have been added. 'X' mark added to certificate reference
Variation V2	2021-02-12	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-0004.

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 TRL08ATEX11185X (incorporating variations V1 to V2)

APPENDIX A - TECHNICAL DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
ELECTRO ETCH STENCIL ARTOWRK FOR VEL (ATEX CERTIFIED)	045/2069A	6	2021-02-05
VEL SERIES VELOCITY TRANSDUCER PCB ASSEMBLY – ATEX INTRINSICALLY SAFE	046/5822A	7	2017-05-09
VELG / VELGT CIRCUIT DIAGRAM	047/1714A	3	2017-05-09
*VEL VELOCITY TRANSDUCER GENERAL ASSEMBLY INTRINSICALLY SAFE - ATEX	EA3501C	9	2017-05-09
VEL VELOCITY TRANSDUCER GENERAL ASSEMBLY, INTRINSICALLY SAFE - ATEX	046/5821A	1	2008-10-14
VEL 2 WIRE VELOCITY TRANSDUCER PCB ASSY INTRINSICALLY SAFE (ATEX CERTIFIED DRAWING)	EA3502A	2	2008-11-20
VELG / VELGT PCB ARTWORK	045/2062A	3	2009-01-07
VELOCITY VIBRATION TRANSDUCER VEL/G & VEL/GT SERIES INTRINSICALLY SAFE VERSION OPERATION AND INSTALLATION	HB.1335	5	2017-05-09