



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

### Ex COMPONENT CERTIFICATE

Certificate No.: IECEx BAS 18.0072U Issue No: 0 Certificate history:  
Status: **Current** Page 1 of 3 Issue No. 0 (2018-12-04)  
Date of Issue: **2018-12-04**  
Applicant: **Hansford Sensors Limited**  
Artisan  
Hillbottom Road  
Sands Industrial Estate  
Bucks  
HP12 4HJ  
United Kingdom  
Ex Component: **HS-004I Capsule**

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Intrinsic Safety**

Marking:  
**Ex ia IIC Ga**

Approved for issue on behalf of the IECEx  
Certification Body:

R. S. Sinclair

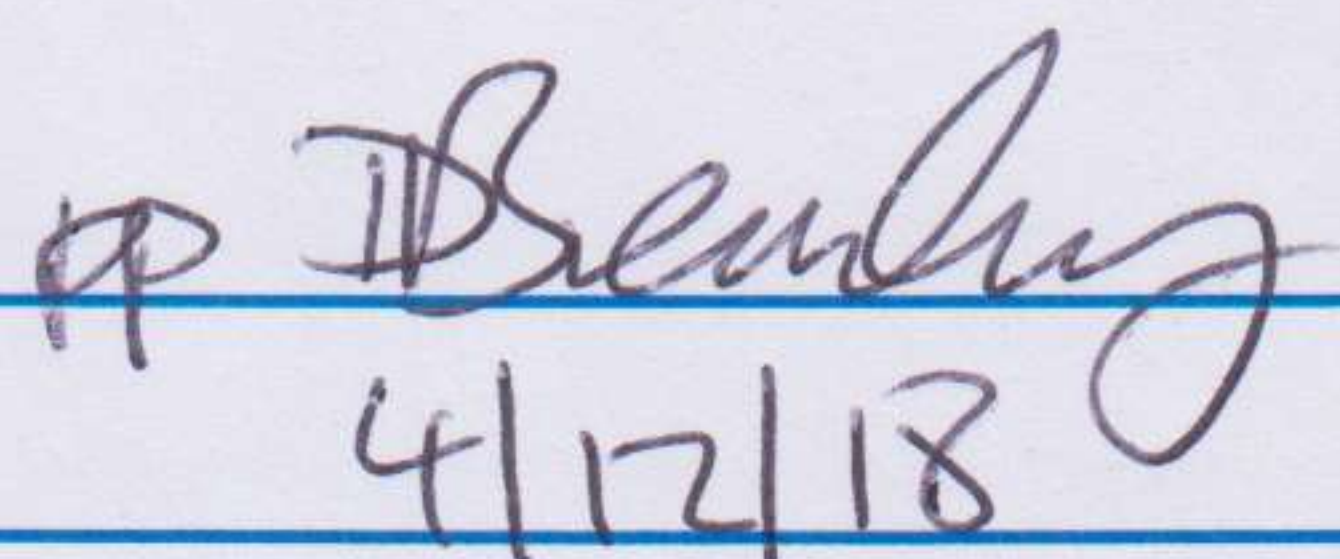
D BREARLEY  
Certification  
Manager

Position:

Technical Manager

Signature:  
(for printed version)

Date:

  
4/12/18

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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







# IECEX Certificate of Conformity

Certificate No: IECEx BAS 18.0072U Issue No: 0  
Date of Issue: 2018-12-04 Page 2 of 3  
Manufacturer: **Hansford Sensors Limited**  
Artisan  
Hillbottom Road  
Sands Industrial Estate  
Bucks  
HP12 4HJ  
United Kingdom

Additional Manufacturing location(s):

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 Component 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 Ex Component 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 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0  
**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

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

#### TEST & ASSESSMENT REPORTS:

*A sample(s) of the Ex Component listed has successfully met the examination and test requirements as recorded in*

Test Report:

[GB/BAS/ExTR17.0256/00](#)

Quality Assessment Report:

[GB/BAS/QAR07.0040/07](#)





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## Schedule

Ex Component(s) covered by this certificate is described below:

The HS-004I Capsule is an accelerometer module designed to measure vibration by converting the signal generated by the compression of a piezo-electric crystal by a given seismic mass and outputting a broadband ac signal to the monitoring equipment.

The HS-004I Capsule comprises a piezo-electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure measuring approximately 5.5cm<sup>3</sup>. The enclosure is a fully welded construction with the top face where the interconnecting wires protrude encapsulated.

Electrical connections are made to the apparatus via the integral wires (3 off).

The terminal parameters are:

U <sub>i</sub>	=	5.2V
I <sub>i</sub>	=	367mA
P <sub>i</sub>	=	305mW
C <sub>i</sub>	=	12pF
L <sub>i</sub>	=	0

The HS-004I Capsule is suitable for the following T Classes and maximum operating local ambient temperatures:

	T6	T5	T4	T3	T2	T1
Mounted in free space (11K surface temperature rise)	69°C	84°C	110°C	110°C	110°C	110°C
Mounted in enclosed space with approximately 61cm <sup>3</sup> of free space around the capsule (16.5K surface temperature rise)	63.5°C	78.5°C	110°C	110°C	110°C	110°C
Mounted in enclosed space with approximately 40cm <sup>3</sup> of free space around the capsule (20K surface temperature rise)	60°C	75°C	110°C	110°C	110°C	110°C

The minimum operating ambient temperature is -30°C

### SCHEDULE OF LIMITATIONS:

1. The piezo-electric crystal within the assembly is internally protected by adequately rated, triplicated zener diodes and so no further consideration is required.
2. The HS-004I Capsule shall be completely encased within an equipment enclosure providing a degree of ingress protection of at least IP20.