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

Certificate No.: IECEx ExTC 18.0032X

Issue No: 0

Certificate history:
Issue No. 0 (2018-12-20)

Status: **Current**

Date of Issue: **2018-12-20**

Applicant: **Hansford Sensor Limited**
Hillbottom Road, Sands Industrial Estate,
High Wycombe, Buckinghamshire HP 12 4HJ, England
United Kingdom

Equipment: **Accelerometer series HS-150A, HS-170A, HS-173A**

Optional accessory:

Type of Protection: **Intrinsic safety 'i'**

Marking:
Ex ia I Ma (T_{amb} noted in conditions of certification)

Approved for issue on behalf of the IECEx Certification Body: David Price

Position: Certification Authority

Signature:
(for printed version)

Date: 2018-12-20

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.

Certificate issued by:

Ex Testing and Certification Pty Ltd
1/30 Kennington Drive
Tomago NSW 2322
Australia

TESTING & CERTIFICATION

IECEx Certificate of Conformity

Certificate No: IECEx ExTC 18.0032X Issue No: 0

Date of Issue: **2018-12-20** Page 2 of 3

Manufacturer: **Hansford Sensor Limited**
Hillbottom Road, Sands Industrial Estate,
High Wycombe, Buckinghamshire HP 12 4HJ, England
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 products 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 apparatus 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 : 2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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 equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/BAS/ExTR18.0244/00

Quality Assessment Report:

GB/BAS/QAR07.0040/07

IECEx Certificate of Conformity

Certificate No: IECEx ExTC 18.0032X Issue No: 0

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The HS-150A and HS-170A Series Accelerometers are designed to measure acceleration or 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 accelerometer comprises of a piezo electric crystal connected to a signal conditioning board, all contained within a fully welded steel enclosure.

HS-150AT versions include a temperature transmitter.

HS-173A is a tri-axial sensor comprising three individual circuits with common 0V line, sharing a single set of parameters.

Electrical connections are made via a connector or integral cable.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex for details

Annex:

ex.IECEx_ExTC_18.0032X_0 Annex Final.pdf

IECEx Certificate of Conformity

Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0032X	Issue No.:	0

Note: The compliance assessment of this product is based on a review of the IECEx test report GB/BAS/ExTR18.0244/00. That report referred to model series HS-150I, HS-170I and HS-173I, which included compliance to Group I, Group II and Group III.

For the purpose of this certificate, a new series HS-150A, HS-170A and HS-173A has been created that will be marked with this certificate number, and is limited to Group I only. The construction and circuit details remain the same as in GB/BAS/ExTR18.0244/00. Revised marking label drawings for these new series have been reviewed and listed in this certificate, replacing the marking label drawings for the series HS-150I, HS-170I and HS-173I.

Conditions of Certification pertaining to Issue 0 of this Certificate:

1. The allowable ambient temperatures provided below shall be taken into account during installation.

Uniaxial Sensors (HS-150A, HS-170A)	-55°C ≤ T_{amb} ≤ 103°C
Triaxial Sensors (HS-173A)	-55°C ≤ T_{amb} ≤ 104°C

2. The parameters provided below shall be taken into account during interconnection into the system.

Uni-axial accelerometer							
Connector only			10m of cable			92m of cable	
Ui	28V		Ui	28V		Ui	28V
Ii	93mA		Ii	93mA		Ii	93mA
Pi	0.65W		Pi	0.65W		Pi	0.65W
Ci	1.2nF		Ci	5.0nF		Ci	35.9nF
Li	0		Li	7.2µH		Li	66µH

Tri-axial accelerometer							
Connector only			10m of cable			92m of cable	
Ui	28V		Ui	28V		Ui	28V
Ii	93mA		Ii	93mA		Ii	93mA
Pi	0.65W		Pi	0.65W		Pi	0.65W
Ci	3.6nF		Ci	7.4nF		Ci	38.3nF
Li	0		Li	7.2µH		Li	66µH

3. When fitted with an integral cable, the flying lead terminations must be afforded a degree of protection of at least IP20.

IECEx Certificate of Conformity

Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0032X	Issue No.:	0

Drawing list pertaining to Issue 0 of this Certificate:

Document Number	Pages / Sheets	Document Title	Revision	Date
C01-001	1	4 Core Screened PUR Cable, 100ºC	01	14-07-2016
C01-002	1	2 Core Screened Overbraided FEP Cable	01	14-07-2016
C01-003	1	3 Core Armoured (FEP Jacketed version)	01	14-07-2016
C01-015-C01-016	1	M12 4 Pole Straight and Right Angled Female Screened Connector PUR Cable Assembly	A	26/10/18
C01-018	1	3 core Screened Silicon Cable, 150ºC.	01	14-07-2016
C01-024	1	2 core Braided Screened & Drain wire Cable	01	14-07-2016
C01-052	1	3 core Braided Screened & Drain wire Cable	01	14-07-2016
C01-082-2C	1	2 core Braided Screened & Drain Wire, 200ºC	01	03-01-2017
C01-082-3C	1	3 core Braided Screened & Drain Wire, 200ºC	02	21-03-2017
C01-099	1	3 Core Braided, Screened & Drain Wire – Filled, 90ºC	02	10-08-2016
M06-073-A	1-3 of 21	General Arrangement and Product Information for Group I, Group II And Group III HS-150I Accelerometers	A	01/08/18
M06-073-A	4-6 of 21	General Arrangement and Product Information for Group I, Group II And Group III HS-150IT Accelerometers	A	01/08/18
M06-073-A	12-13 of 21	General Arrangement and Product Information for Group I, Group II And Group III HS-170I Accelerometers	A	01/08/18
M06-073	14 of 21	General Arrangement and Product Information for Group I, Group II And Group III Accelerometers	A	01/08/18
M06-073-A	18 of 21	General Arrangement and Product Information for Group I, Group II And Group III HS-173I Accelerometers	A	01/08/18
M06-081-A	1-2 of 6	Label Information for ExTC Group I HS-150A and HS-150AS series	A	17/12/18
M06-081-A	3-4 of 6	Label Information for ExTC Group I HS-170A and HS-170AS series	A	17/12/18
M06-081-A	5-6 of 6	Label Information for ExTC Group I HS-173A and HS-173AR series	A	17/12/18
P03-106	1	ATEX AC gain circuit	A	16/08/18
P01-106	1	AC gain PCB track layout	A	30.08.18

IECEx Certificate of Conformity

Annexe

Annexe for Certificate No.:	IECEx ExTC 18.0032X	Issue No.:	0

Document Number	Pages / Sheets	Document Title	Revision	Date
P02-106-A-1	1 of 3	HS-150I/170I PCB Component Layout	A	30.08.18
P02-106-A-2	2 of 3	HS-150I/170I PCB Component Layout, Wire Routing Through Cap	A	30.08.18
P02-106-A-3	3 of 3	HS-150I/170I PCB Component Layout, Wire Routing Through Cap Side Exit Version	A	30.08.18
P01-001-A	1	100 Series connection PCB	A	06/02/07
P01-050	1	HS-109 connection PCB track layout	B	15.02.12
P02-050	1	HS-109 Connection PCB component layout	B	15.02.12
P01-006	1	Connection + temp. PCB track layout	C	01.10.08
P01.015	1	3 Pin MS Connection + Temp. PCB	D	03.06.16
P02-006	1	Connection + Temp. PCB component layout	B	04.03.08
P03-015	1	Temperature Circuit Diagram	A	25/10/18