1 # EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3 EC - Type Examination Certificate Number: **Baseefa07ATEX0144X – Issue 4**

4 Equipment or Protective System: **HS-100 Series Accelerometer**

5 Manufacturer: **Hansford Sensors Ltd**

6 Address: **Sands Industrial Estate, Bucks, HP12 4HJ**

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

8 Baseefa, Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report No's. **See certificate history**

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

EN 60079-0: 2012 EN 60079-11: 2012

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for 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 or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

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

⟨Ex⟩ II 1G Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +110°C)

⟨Ex⟩ II 1D Ex ia IIIC T130°C IP65 Da (-55°C ≤ Ta ≤ +110°C)

⟨Ex⟩ II 1G Ex ia IIC T4 Ga (-55°C ≤ Ta ≤ +60°C)

⟨Ex⟩ II 1D Ex ia IIIC T80°C IP65 Da (-55°C ≤ Ta ≤ +60°C)

Baseefa Customer Reference No. **5943** Project File No. **14/1001**

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R S SINCLAIR
GENERAL MANAGER
On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa07ATEX0144X – Issue 4**

15 Description of Equipment or Protective System

The HS-100 Series Accelerometer is designed to measure acceleration, shock 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 a piezo electric crystal connected to a signal conditioning board, all contained within a stainless steel enclosure of various shapes measuring approximately 25cm^3. The enclosure is a fully welded construction.

Electrical connections are made to the apparatus either via an IP65 rated connector or via an integral cable which is encapsulated in the end of the apparatus.

The apparatus has the following terminal parameters:

Connector only
Ui = 28V
Ii = 93mA
Pi = 0.65W
Ci = 1.0nF
Li = zero

10m of Cable	
Ui = 28V	
Ii = 93mA	
Pi = 0.65W	
Ci = 9.9nF	
Li = 6µH	or Li/Ri = 15.4µH/Ω

92m of Cable
Ui = 28V
Ii = 93mA
Pi = 0.65W
Ci = 82nF
Li/Ri = 15.4µH/Ω

16 Report Number

See certificate history

17 Specific Conditions of Use

1. The free end of the cable on the integral cable version of the apparatus must be terminated in an appropriately certified dust proof enclosure when dust protection is required.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

New drawings submitted for this issue of certificate.

None.

Current drawings also associated with this certificate.

Number	Sheet	Issue	Date	Description
P02-003	1 of 1	B	07.06.07	AC PCB Component Layout
P03-003	1 of 1	B	12.06.07	Inner Module PCB Circuit
HS100.IS	1 of 1	A	12.06.07	HS100I Schematic
M06-002-A	1 of 1	A	15.06.07	Zener Diode Arrangement
M06-001-C	1 to 5	C	30/08/12	General Arrangement and Product Information for Group I, Group II and Group III Accelerometer

These drawings are also associated with IECEx BAS 07.0035X, IECEx BAS 07.0037X, Baseefa07ATEX0149X and held with IECEx BAS 07.0035X.

20 Certificate History

Certificate No.	Date	Comments
Baseefa07ATEX0144X	13 July 2007	The release of the prime certificate. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR07.0076/00 held on technical file IECEx BAS 07.0035X.
Baseefa07ATEX0144X/1	10 March 2011	1. To permit the use of a different type of cable. 2. Show the new address of the manufacturer on the marking drawings. Intrinsic safety is not affected. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR11.0045/00 held on technical file IECEx BAS 07.0035X.
Baseefa07ATEX0144X/2	10 October 2012	1. To confirm that the equipment covered by this certificate also meets the requirements of EN 60079 0: 2012 (IEC 60079 0: 2011, Edition 6) and EN 60079 11: 2012 (IEC 60079 11: 2011, Edition 6). Intrinsic safety is not affected. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR12.0254/00 held on technical file IECEx BAS 07.0035X.
Baseefa07ATEX0144X Issue 3	29 April 2013	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate and permits the accelerometer to be supplied with 10m of cable with a resultant change to the entity parameters. Specific condition of use relating to a change in Ci removed. Intrinsic safety is not affected. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR13.0101/00 held on technical file IECEx BAS 07.0035X.
Baseefa07ATEX0144X Issue 4	9 January 2015	To permit additional terminal parameters to be added for connector only variants (no cable included). A test and assessment report was not required for this change.
For drawings applicable to each issue, see original of that issue.		