1 # EU - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

3 EU - Type Examination Certificate Number: **Baseefa07ATEX0149X – Issue 8**

3.1 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. Supplementary 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.

4 Product: **HS-100 Series Accelerometer**

5 Manufacturer: **Hansford Sensors Ltd**

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

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa07ATEX0149X to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Fimko Oy, Notified Body number 0598, 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.

8.1 The original certificate was issued by SGS Baseefa Ltd (UK Notified Body 1180). It, and any supplements previously issued by SGS Baseefa Ltd have been transferred to the supervision of SGS Fimko Oy (EU Notified Body 0598). The original certificate number is retained.

The examination and test results are recorded in confidential Report No. **See Certificate History**

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

EN IEC 60079-0: 2018 **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 product is subject to the 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 the product shall include the following:

Ex I M1 Ex ia I Ma (-55°C ≤ Ta ≤ +110°C)

SGS Fimko Oy Customer Reference No. **5943** Project File No. **22/0068**

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13 # Schedule

14 ## Certificate Number Baseefa07ATEX0149X – Issue 8

15 Description of Product

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 non-fused version of the apparatus (HS-100Mxxxxxxx and HS-100MSxxxxxxx) has the following terminal parameters:

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 = 1.0nF	Ci = 9.9nF	Ci = 83nF
Li = negligible	Li = 7µH or Li/Ri = 15.4µH/Ω	Li/Ri = 15.4µH/Ω

The fused version of the apparatus (HS-100MFxxxxxxx and HS-100SFxxxxxxx) has the following terminal parameters:

Connector only	10m of Cable	92m of Cable
Ui = 16.5V	Ui = 16.5V	Ui = 16.5V
Ci = 1.0nF	Ci = 5nF	Ci = 41nF
Li = negligible	Li = 7µH or Li/Ri = 15.4µH/Ω	Li/Ri = 15.4µH/Ω

16 Report Number

GB-BAS-ExTR22.0079-00

17 Specific Conditions of Use

1. The Ci of the non-fused version of the equipment (HS-100Mxxxxxxx and HS-100MSxxxxxxx) when fitted with 92m of cable has been increased from 41nF to 83nF.

18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject
1.2.7	LVD type requirements
1.2.8	Overloading of equipment (protection relays, etc.)
1.4.1	External effects
1.4.2	Aggressive substances, etc.

19 Drawings and Documents

No new drawings were submitted for this assessment.

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
P01-003	1 of 1	C	12.09.17	HS100I PCB Track Layout
P02-003	1 of 3	C	12.09.17	HS-100I PCB Component Layout
P02-003	2 of 3	C	12.09.17	HS-100I PCB Component Layout, Wire Routing Through Cap
P02-003	3 of 3	C	12.09.17	HS-100I PCB Component Layout, Wire Routing Through Cap Side Exit Version
M06-001-D	1 to 6	D	04/03/16	General Arrangement and Product Information for Group I, Group II and Group III Accelerometer
M06-025-C	1 to 5	C	30/08/12	General Arrangement and Product Information for Group I Fused Accelerometer
HS100.M	1 of 1	A	11.11.08	HS-100 Schematic
P01.031	1 of 1	A	30.10.08	Connection PCB for HS-100I M12 or Cable + Fuse
P02.031.1	1 of 1	A	30.10.08	Connection PCB for HS-100 MF Cable Versions
P02.031.2	1 of 1	A	30.10.08	Connection PCB for HS-100 MF M12 Versions

20 Certificate History

Certificate No.	Date	Comments
Baseefa07ATEX0149	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.
Baseefa07ATEX0149/1	20 November 2008	1. The introduction of the fused version (HS-100MFxxxxxxx and HS-100SFxxxxxxx), thus eliminating the need to limit power into the equipment. Intrinsic safety is not affected. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR08.0237/00 held on technical file IECEx BAS 07.0037X.
Baseefa07ATEX0149/2X	10 March 2011	1. To permit the use of a different type of cable on the non-fused version only (HS-100Mxxxxxxx and HS-100MSxxxxxxx). The fused versions (HS-100MFxxxxxxx and HS-100SFxxxxxxx) are not affected by this change. 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.

Certificate No.	Date	Comments
Baseefa07ATEX0149/3X	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.
Baseefa07ATEX0149X Issue 4	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.
Baseefa07ATEX0149X Issue 5	9 January 2015	To permit additional terminal parameters to be added for connector only variants (no cable included) and 10m of cable. A test and assessment report was not required for this change.
Baseefa07ATEX0149X Issue 6	22 March 2016	To permit the use of an alternative cable type and the use of an alternative catalyst with the encapsulant. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR16.0097/00 held on technical file IECEx BAS 07.0035X
Baseefa07ATEX0149X Issue 7	4 October 2017	To permit minor changes to the main PCB and confirm the equipment meets the requirements of Directive 2014/34/EU. The associated test and assessment is documented in Test Report No. GB/BAS/ExTR17.0267/00 held on technical file IECEx BAS 07.0035X
Baseefa07ATEX0149X Issue 8	17 June 2022	To confirm that the equipment covered by this certificate meets the requirements of EN IEC 60079-0: 2018. Test Report No. GB/BAS/ExTR22.0079/00. Project 22/0068.
For drawings applicable to each issue, see original of that issue.		