



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 00ATEX1029** Issue: **6**

4 Equipment: **Type 50 Series Sensor Head**

5 Applicant: **H & b Sensors Limited**

6 Address: **Odyssey House
Durban Road
Bognor Regis
West Sussex PO22 9RH
UK**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.


9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:


EN 60079-0:2006 including corrigendum 1 EN 61241-0:2006
EN 60079-1:2007 EN 61241-1:2004
With reference to IEC 60079-0:2007 in respect of marking

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment 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. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

Either:  II 2 GD
Ex d IIC T6 Gb T_{amb} +55°C
Ex t IIIC T85°C Db IP68 T_{amb} +55°C

Or:  II 2 GD
Ex d IIC T5 Gb T_{amb} +70°C
Ex t IIIC T100°C Db IP68 T_{amb} +70°C

Or:  II 2 GD
Ex d IIC T4 Gb T_{amb} +105°C
Ex t IIIC T135°C Db IP68 T_{amb} +105°C

Or:  II 2 GD
Ex d IIC T3 Gb T_{amb} +170°C
Ex t IIIC T200°C Db IP68 T_{amb} +170°C

Project Number 25345
C. Index 13


C Ellaby
Deputy Certification Manager

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13 DESCRIPTION OF EQUIPMENT

The Series 50 Ex d Flameproof Head is a general purpose enclosure intended for use with temperature measuring equipment typically in the form of thermocouples or platinum resistance thermometers. It may also be fitted with a pair of float switch assemblies and used as a liquid level probe. It is of cylindrical shape and has a two-part construction with a threaded lid screwing into the main base assembly. The lid comes in three variants, two low cap variants and a high cap variant. The high cap variant and one of the low cap variants has a toughened soda lime glass window, this is retained by means of a ceramic cement, 'Autostic FC', and a threaded locking ring. This window allows a loop powered display in the high cap variant and a temperature indicator in the low cap variant to be viewed. The base comes in three variants, either one side-threaded cable entry point with one entry on the bottom consisting of a cylindrical and a threaded joint, two side-threaded cable entry points with one entry on the bottom consisting of a cylindrical and a threaded joint or two side-threaded cable entry points only. All cable entry points are intended to be used with suitably dimensioned and certified cable entry components, the cable entry threadforms may be either M20 x 1.5 or 1/2" NPT.

Variants

Type No.	Base Entry Options		Lid Size	Window Option
Type 50	1 Side Entry	1 Bottom Entry	Low Cap	N/A
Type 50	1 Side Entry	1 Bottom Entry	High Cap	YES
Type 51	2 Side Entries	1 Bottom Entry	Low Cap	N/A
Type 51	2 Side Entries	1 Bottom Entry	High Cap	YES
Type 52	2 Side Entries	-	Low Cap	N/A
Type 52	2 Side Entries	-	High Cap	YES

Variation 1 - This variation introduced the following change:

- i. The unit was allowed to be used as a liquid level probe by including float assemblies on the probe to operate magnetic switches located inside.

Variation 2 - This variation introduced the following changes:

- i. The introduction of an alternative screw cap cover for Type 50, 51 and 52 sensors, this cover is manufactured in either aluminium alloy or stainless steel and has the option to be fitted with a visual indicator feature incorporating a new visual indicator assembly, as shown on drawing HBS/13/6053.
- ii. The recognition of the following changes to the Type 50 and 51 bodies:
 - The introduction of two internal M6 x 12 blind holes.
 - The two existing internal tapped M4 holes to be machined to a maximum depth of 10 mm.
- iii. The introduction of alternative 1/2" NPT threaded cable entries within Type 51 Exd head body.
- iv. The recognition of minor modifications to drawing numbers HBS/13/3660 and HBS/13/6053; these changes are administrative and do not affect the aspects of the product that are relevant to explosion safety.



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Variation 3 - This variation introduced the following change:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest standards, the documents originally listed in section 9, EN 50014:1997, EN 50018:1994 and EN 50281-1-1:1998, were replaced by those currently listed, the markings in section 12 were updated accordingly and the equipment description was modified taking into account changes in Variations.

Variation 4 - This variation introduced the following change:

- i. The introduction of an Outside Air Temperature Sensor, the Description of the Equipment is modified to reflect this change.

Variation 5 - This variation introduced the following changes:

- ii. The machining details were changed to include an internal mounting bracket.
- iii. A dual entry head with both cables entries on the same side was recognised.

Variation 6 - This variation introduced the following changes:

- i. For the Type 52 Sensor Head only, the specification of the holes provided for the internal earth facility, the external earth facility and the internal tapped mounting holes were defined more clearly, in addition, the size of some of the holes was changed.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	25 April 2000	R51X6404A	The release of the prime certificate.
1	11 March 2004	R51V10966A	The introduction of Variation 1.
2	21 March 2007	R51A15483A	The introduction of Variation 2.
3	25 July 2008	R51A18325A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 3, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The introduction of Variation 3.
4	14 August 2009	R51A20131A	The introduction of Variation 4.
5	25 October 2010	R21936A/00	The introduction of Variation 5.
6	12 September 2011	R25345A/00	The introduction of Variation 6.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

None

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16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

Certificate Annexe

Certificate Number: Sira 00ATEX1029
Equipment: Type 50 Series Sensor Head
Applicant: H & b Sensors Limited



Issue 0

Number	Sheet	Rev.	Date	Description
HBS/0/00618	1 of 1	B	04 Feb 00	Ex d Cap Window
HBS/0/00619	1 of 1	A	15 Oct 98	Retaining Screw Ring
HBS/0/00620	1 of 2	B	22 Oct 98	Head 50 Body Casting
HBS/0/00620	2 of 2	B	29 Oct 98	Head 50 Body Casting
HBS/0/00621	1 of 1	A	05 Mar 98	Head 50 Screw Cap-Short
HBS/0/00622	1 of 1	B	10 Mar 98	Head 50 Screw Cap (Tall)
HBS/0/00640	1 of 2	B	22 Oct 98	Head 52 Junction Box Machining Detail
HBS/0/00640	2 of 2	B	22 Oct 98	Head 52 Junction Box Machining Detail
HBS/0/00641	1 of 2	C	03 Nov 98	Ex d Head 50 Body Machining Detail
HBS/0/00641	2 of 2	C	06 Jul 99	Ex d Head 50 Body Machining Detail
HBS/0/00642	1 of 2	C	15 Oct 99	Ex d Head 51 Body Machining Detail
HBS/0/00642	2 of 2	C	15 Oct 99	Ex d Head 51 Body Machining Detail
HBS/0/00682	1 of 1	A	06 Jul 99	Flame Path Collar
HBS/13/3660	1 of 1	A	03 Feb 00	Type 51 Ex D Head Assy (Tall Cap Ind)
HBS/6/00697	1 of 1	A	06 Mar 00	Series 50 Head Label

Issue 1

Number	Sheet	Rev.	Date	Description
HBS/9/4921	1 of 1	A	9 Jul 03	EEx d liquid level probe

Issue 2

Number	Sheet	Rev.	Date (Sira stamp)	Description
HBS/0/00930	1 of 1	A	21 Mar 03	Ex d Head 50 51 & 52 Screw Cap-Mid
HBS/0/00641	1 of 2	D	21 Mar 03	Ex d Head 50 Body Machining Detail
HBS/0/00641	2 of 2	D	21 Mar 03	Ex d Head 50 Body Machining Detail
HBS/0/00642	1 of 2	D	21 Mar 03	Ex d Head 51 Body Machining Detail
HBS/0/00642	2 of 2	D	21 Mar 03	Ex d Head 51 Body Machining Detail
HBS/13/3660	1 of 1	B	21 Mar 03	Type 51 Ex d Head Assy (Tall Cap Ind)
HBS/13/6053	1 of 1	A	21 Mar 03	Visual Indicator Exd Connection Head

Issue 3

Number	Sheet	Rev.	Date (Sira stamp)	Description
HBS/6/00697	1 of 1	B	11 Jul 08	Series 50 Head Label

Issue 4

Number	Sheet	Rev.	Date (Sira stamp)	Description
HBS/0/01045	1 of 1	P	04 Aug 09	Air Temp. Sensor Sheath

Issue 5

Number	Sheets	Rev.	Date (Sira stamp)	Description
HBS/0/01164	1 of 1	A	20 Oct 10	Head 52 J/Box Machining Detail
HBS/0/01165	1 of 1	A	20 Oct 10	Head 50 Series Body Casting
HBS/0/01166	1 of 1	A	20 Oct 10	Head 50 Series Body Casting
HBS/0/01169	1 of 1	A	20 Oct 10	Head 52 J/Box Machining Detail
HBS/0/01170	1 of 1	A	20 Oct 10	Head 50 Series Body Casting
HBS/0/01171	1 of 1	A	20 Oct 10	Head 50 Series Body Casting

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Certificate Annexe

Certificate Number: Sira 00ATEX1029
Equipment: Type 50 Series Sensor Head
Applicant: H & b Sensors Limited



Issue 6

Drawing	Sheets	Rev.	Date(Sira stamp)	Description
HBS/0/01164	1 of 1	B	5 Jul 11	Head 52 Junction Box Machining Detail
HBS/0/01169	1 of 1	B	5 Jul 11	Head 52 Junction Box Machining Detail

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