



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 02ATEX3072** Issue: **9**

4 Equipment: **Freezstop Super/FailSafe Super (FSS) and Freezestop Aviation (FSA)
Self-Regulating Heating Cable with Outer Jacket**

5 Applicant: **Heat Trace Limited**

6 Address: **Meres Edge
Chester Road
Helsby
Frodsham WA6 0DT
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 60079-0:2009 IEC 60079-31:2008 EN 60079-30-1:2007

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:



II 2GD

Ex e IIC T3 Gb

Ex tb IIIC T200°C Db IP67

Ex e IIC T2 Gb

Ex tb IIIC T300°C Db IP67

Refer to the Description of Equipment for the ambient range.

Applicable for products rated up to 75 W/m and 277 V max.

Applicable for products rated above 75 W/m and for nominally rated 230 V products powered up to a maximum 277 V.

Project Number 27430

C Ellaby
Deputy Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

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13 DESCRIPTION OF EQUIPMENT

The Freezstop Super/ FailSafe Super (FSS) and Freezestop Aviation (FSA) Self –Regulating Heating Cable comprises two parallel buswires housed within a semi-conductive self-limiting matrix. The semi conductive self-limiting matrix is covered with a fluoropolymer jacket which is then protected by an aluminium sheath or a metallic braid of either tinned copper or nickel plated copper. An optional outer jacket of MFA, PFA or Silicone can be specified. The cables are rated at up to 100 W/m and 277 V.

The cable is intended to be cut to length on site and the equipment is designed to be connected to a supply by means of suitable certified cable entries and junction boxes (i.e. Ex e or Ex d) in accordance with the manufacturer’s installation instructions. Termination can be made using the Heat Trace termination kits approved under Sira 12ATEX3157U, Sira 05ATEX3099U and Sira 04ATEX3293X or any suitably certified type termination kit, which fully isolate, insulate and seal the conductive cores.

Description	Temperature
Max. continuous exposure temperature (Power ON)	225°C
Max. permissible exposure temperature (Power OFF)	225°C
Minimum installation temperature	-40°C

Variation 1 dated 25 November 2003 - This variation introduced the following change:

- i. The introduction of an alternative conductive core material

Variation 1 dated 23 December 2004 - This variation introduced the following changes:

- i. To permit this equipment to be used in the presence of combustible dust; the marking in section 12 is amended accordingly and the relevant standard added at section 9.
- ii. The option to add a customer name or reference in the marking applied to the trace heating cables

Variation 2 - This variation introduced the following change:

- i. To permit the use of the Heat Trace End Termination Kit (Sira certificate number 05ATEX3099U) with the trace heating cable

Variation 3 - This variation introduced the following changes:

- i. To recognise the change of Applicant’s address from Stockport SK6 2RF to Frodsham WA6 0DT.
- ii. A change in braid diameter on the cables.

Variation 4 - This variation introduced the following change:

- i. The specification of the cable to be changed, as listed in the table below;

Description	Freezstop Super (FSS)	
	Previous values	Latest values
Max. continuous exposure temperature (Power ON)	120°C	150°C
Max. permissible exposure temperature (Power OFF)	200°C	240°C
T - Rating	T3	T3

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Sira Certification Service

Rake Lane, Eccleston, Chester, CH4 9JN, England

Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: info@siracertification.com
Web: www.siracertification.com



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Variation 5 - This variation introduced the following changes:

- i. Bus wire specifications amended to have a Min/Max cross sectional area.
- ii. Changes to the FSS (Small Version) drawings, HC2550/O and HC2500/O, introducing the FSA (Freezestop Aviation) Cables.

Variation 6 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, IEC 62086-1:2001, EN 50014:1997 (amendments 1 and 2), EN 50019:2000 and EN 50281-1-1:1998, were replaced by those currently listed, the markings in section 12 were updated accordingly and the conditions were modified to recognise the requirements of the latest standards.

Variation 7 - This variation introduced the following changes:

- i. The markings and description of the ratings in the markings have been amended to include the latest requirements for type of protection Ex tb.
- ii. The descriptions have been amended to align with other certificate descriptions and to remove ambiguity and inconsistencies across the range of the manufacturer's certificates.
- iii. The upper tolerance of the power output stated in the description was amended.
- iv. At the request of the manufacturer, the drawing numbers of existing drawings were clarified to be in line with their company system.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report/File no.	Comment
0	7 March 2003	R53A8908A	The release of the prime certificate.
1	25 November 2003	R53V10885A	The introduction of Variation 1.
2	14 July 2004	51V12186	Prime certificate re-issued to amend the date of a drawing and to incorporate variation 1 dated 25 November 2003.
3	23 December 2004	R51A12475A	The introduction of Variation 1.
4	13 July 2005	R51A12633B	The introduction of Variation 2.
5	25 April 2006	R51A14380A	The introduction of Variation 3.
6	12 February 2008	R52A17234A	The introduction of Variation 4
7	11 September 2008	R52A18177A	This Issue covers the following changes: <ul style="list-style-type: none"> • All previously issued certification was rationalised into a single certificate, Issue 7, Issues 0 to 6 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 5.
8	01 June 2010	R21959A/00	The introduction of Variation 6.
9	21 May 2012	R27430A/00	The introduction of Variation 7.

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- 15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)
None
- 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.
- 17.3 An electric strength test of $\sqrt{2} U + 1000$ V rms shall be applied between the conductors and the outer braid or jacket as appropriate for 60 seconds as required by clause 5.1.2 of EN 60079-30-1:2007.
- 17.4 An electric strength test of the polymeric sheath (overjacket) used for corrosion resistance shall be carried out in accordance with the requirements of EN 60079-30-1:2007 clause 5.2.1.
- 17.5 The manufacturer shall verify the output rating for each cable manufactured in accordance with EN 60079-30-1-2007 clause 5.2.2.
- 17.6 The manufacturer shall demonstrate, through their quality program, the thermal safety of the trace heating cable with respect to time as per EN 60079-30-1:2007 clause 5.1.12.

Certificate Annexe



Certificate Number: Sira 02ATEX3072
Equipment: Freezstop Super/FailSafe Super (FSS) and Freezstop Aviation (FSA) Self-Regulating Heating Cable with Outer Jacket
Applicant: Heat Trace Limited

Issue 0

Drawing No.	Sheet	Rev.	Date	Description
HC2500/O	1 of 1	1	02 Aug 02	FSS Specification
BES1-PL	1 of 1	A	06 Mar 00	BES1 – End seal reference list
BES2-PL	1 of 1	A	06 Mar 00	BES2 – End seal reference list
BPS1-PL	1 of 1	A	06 Mar 00	BPS1 – Silicone boot power seal reference list
HES2-PL	1 of 1	A	06 Mar 00	HES2 – Shrink sleeve end seal reference list
HPS2-PL	1 of 1	A	06 Mar 00	HPS2 – Shrink sleeve power seal reference list
HC3400/S	1 of 1	0	12 Nov 03	FSS alternative cable configuration

Issue 1

Drawing No.	Sheet	Rev.	Date	Description
HC3400/S	1 of 1	0	12 Nov 03	FSS alternative cable configuration

Issue 2

Drawing No.	Sheet	Rev.	Date	Description
HC2500/O	1 of 1	1	02 Aug 02	FSS Specification
BES1-PL	1 of 1	A	06 Mar 00	BES1 – End seal reference list
BES2-PL	1 of 1	A	06 Mar 00	BES2 – End seal reference list
BPS1-PL	1 of 1	A	06 Mar 00	BPS1 – Silicone boot power seal reference list
HES2-PL	1 of 1	A	06 Mar 00	HES2 – Shrink sleeve end seal reference list
HPS2-PL	1 of 1	A	06 Mar 00	HPS2 – Shrink sleeve power seal reference list
HC3400/S	1 of 1	0	12 Nov 03	FSS alternative cable configuration

Issue 3

Drawing No.	Sheet	Rev.	Date	Description
HC3500/S	1	1	27 Sep 04	Sira Certification Drawing for Freezstop Super
HC2500/O	1	3	23 Sep 04	Sira Certification Drawing for Freezstop Super with Metallic Braid and Outer Jacket

Issue 4

Drawing No.	Sheet	Rev.	Date	Description
SF2580/S	1 of 1	A	27 Jun 05	Applicable Cable List for use with Stripfree End Termination Kit

Issue 5

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
HC2500/O	1 of 1	4	06 Mar 06	Freezstop Super with Metallic Braid & Outer Jacket
HC3500/S	1 of 1	2	06 Mar 06	Freezstop Super

Issue 6

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
HC2500/O	1 of 1	5	12 Feb 08	Sira Certification Drawing for Freezstop Super, Complete with Braid & Outer Jacket
HC3500/S	1 of 1	3	12 Feb 08	Sira Certification Drawing for Freezstop Super, Complete with Braid & Outer Jacket Alternative Cable Configuration of Drawing HC2500/O

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Applicant: Heat Trace Limited



Issue 7

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
HC2500/O	1 of 1	6	20Aug 08	Sira Certification Drawing For Freezstop Aviation, Complete With Braid & Outer Jacket.
HC3500/S	1 of 1	4	20Aug 08	Sira Certification Drawing For Freezstop Super, Complete With Braid & Outer Jacket. Alternative Cable Configuration of Drawing HC2500/O

Issue 8

Drawing No.	Sheet	Rev.	Date (Sira stamp)	Description
HC3500/S	1 of 1	5	20Aug 08	Sira Certification Drawing For Freezstop Super, Complete With Braid & Outer Jacket. Alternative Cable Configuration of Drawing HC2500/O

Issue 9

Drawing	Sheets	Rev.	Date (Sira Stamp)	Title
HC3500/O	1 of 1	7	14 Feb 12	Sira Certification for Freezstop Super

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