



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 04ATEX3012** Issue: **8**

4 Equipment: **FreezStop/FailSafe Ultimo (FSU) Range of Trace Heating Cables**

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 60079-0:2012

EN 60079-31:2009

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 T2 Gb

Ex t IIIC T300°C Db

Project Number 25433

P J Walsh
Technical Advisor

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13 DESCRIPTION OF EQUIPMENT

The FSU Self-Regulating Heating Cables utilise two parallel buswires housed within a semi-conductive self-limiting matrix. The semi-conductive self-limiting matrix is covered with a jacket which is then protected by an aluminium sheath or metallic braid of either tinned copper or nickel plated copper. An outer jacket of MFA, PFA or silicone can be specified. The cables are rated at up to 90 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 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)	250°C
Max. permissible exposure temperature (Power OFF)	250°C
T - Rating	T3 up to and including 75 W/m
	T2 above 75 W/m
Minimum installation temperature	-40°C

These heating cables meet the requirements for degree of protection IP67.

Variation 1 - This variation introduced the following changes:

- i. To permit this equipment to be used in the presence of combustible dust, the standard was added at section 9 and the marking in section 12 is amended accordingly.
- ii. To allow 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 inclusion of a trace heating cable rated at 90 W/m in the FSU/FSUw range.

Variation 3 - 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 4 - This variation introduced the following changes:

- i. To recognise a change in the manufacturer's address from Stockport SK6 2RF to Frodsham WA6 0DT.
- ii. To Permit a change in braid diameter on the cables

Variation 5 - This variation introduced the following changes:

- i. To permit the specification of the cable to be changed, as detailed in the table below:

Description	Freezstop Ultimo (FSU and FSUw)	
	Previous values	Latest values
Max. continuous exposure temperature (Power ON)	200°C	240°C
Max. permissible exposure temperature (Power OFF)	240°C	240°C
T - Rating	T2	T3 up to and including 60 W/m
		T2 above 60 W/m

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Sira Certification Service

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Variation 6 - This variation introduced the following change:

- i. To Allow bus wire specifications to have a Min/Max cross sectional area.

Variation 7 - 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 8 - This variation introduced the following changes:

- ii. Following appropriate re-assessment to demonstrate compliance with the requirements of the latest general requirements standard, EN 60079-0:2009 was replaced by EN 60079-0:2012.
- iii. The FreezStop/FailSafe Ultimo (FSUw)* range of trace heating cables were removed from this certificate and will henceforth be manufactured under certificate number Sira 13ATEX3126. A new description that details the FSU Self-Regulating Heating Cables in their current format of has been introduced, however, to maintain the history of the certificate, the content of the previous Variations is unchanged. The new description also encompasses, the following product changes that are addressed in the report associated with this Issue.
 - The use of an additional, optional, chemical resistant outer jacket manufactured from silicone was endorsed.
 - The cross sectional area range (mm²) of the bus wires was modified.
 - The use of an additional continuous conductive coating, manufactured from aluminium, was recognised.
 - The manufacturer's declared value for the maximum withstand temperature (°C) was increased from 240°C to 250°C.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report No.	Comment
0	5 March 2004	R53A10885B	The release of the prime certificate.
1	23 December 2004	R51A12475A	The introduction of Variation 1.
2	12 May 2005	R51A12531A	The introduction of Variation 2.
3	13 July 2005	R51A12633B	The introduction of Variation 3.
4	25 April 2006	R51A14380A	The introduction of Variation 4.
5	12 February 2008	R52A17234A	The introduction of Variation 5.

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Issue	Date	Report No.	Comment
6	11 September 2008	52A18177A	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 6, Issues 0 to 5 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 6.
7	1 June 2010	R21959A/00	The introduction of Variation 7.
8	28 March 2013	R25433D/00	The introduction of Variation 8.

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

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Certificate Annexe

Certificate Number: Sira 04ATEX3012
Equipment: FreezStop/FailSafe Ultimo (FSU) Range of Trace Heating Cables
Applicant: Heat Trace Limited



Issue 0

Drawing No.	Sheet	Rev.	Date	Description
HC3400/S	1 of 1	1	15 Oct 03	FSU 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
BPS2-PL**	1 OF 1	A	06 Feb 01	Bps2 – 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

* Held on certificate file Sira 02ATEX3072

**This drawing held with certificate Sira 02ATEX3070

Issue 1

Drawing No.	Sheet	Rev.	Date	Description
HC3400/S	1	1	27 Sep 04	Sira Certification Drawing for Freezstop Ultimo

Issue 2

Drawing No.	Sheet	Rev	Date	Description
HC3400/S	1 of 1	2	01 Apr 05	Freezstop Ultimo, complete with braid and outer jacket

Issue 3

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 4

Drawing No.	Sheet	Rev	Date (Sira stamp)	Description
HC3400/s	1 of 1	2	06 Mar 06	Freezstop Ultimo, Complete With Braid & Outer Jacket

Issue 5

Drawing No.	Sheet	Rev	Date (Sira stamp)	Description
HC3400/s	1 of 1	3	12 Feb 08	Freezstop Ultimo, Complete with Braid & Outer Jacket

Issue 6

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
HC3400/s	1 of 1	4	20 Aug 08	Freezstop Ultimo, Complete With Braid & Outer Jacket

Issue 7

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
HC3400/s	1 of 1	5	18 Jun 10	Freezstop Ultimo, Complete With Braid & Outer Jacket

Issue 8

Drawing No.	Sheets	Rev.	Date (Sira stamp)	Description
HC3400/0	1 of 1	8	08 Mar 13	Sira Certification for Freezstop Ultimo, complete with Braid & Outer Jacket

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