



1 **TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 02ATEX3078** Issue: **2**

4 Equipment: **Powerheat PHT Constant Power Heating Cable**

5 Applicant: **Heat Trace Limited**

6 Address: **Meres Edge
Chester Road
Helsby
Frodsham
WA6 0DT
UK**

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

8 Sira Certification Service certifies that this equipment has been found to comply with the Essential Health and Safety Requirements that relate to the design of Category 2 equipment, which is intended for use in potentially explosive atmospheres. These Essential Health and Safety Requirements are given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

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 of this certificate, has been assessed by reference to:

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 TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment, and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following:



II 2G IP67

Ex e IIC T* Gb

Ex t IIIC T#°C

T* and T#°C (see schedule)

D R Stubbings BA MIET
Certification Manager

Project Number 51A21959
C. Index 06

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Sira Certification Service

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SCHEDULE

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Issue2

13 DESCRIPTION OF EQUIPMENT

The Powerheat PHT Heating Cables are constant power trace heating cables that are used to protect against freezing or maintain temperatures. The cables are rated at up to 70 W/m on a supply voltage up to 277 V. They comprise two insulated parallel bus wires, around which is extruded a layer of insulation. A resistance wire is spiralled over the core, which is notched at intervals so that the resistance wire connects to the bus wires underneath. A further layer of mica and glass tape insulation is extruded over the top of the resistance wire. The insulation is covered with a nickel plated copper braid and an additional anti-corrosive covering manufactured from fluoropolymer may be extruded over the braid.

The heating cables are cut to length to form a unit that is terminated at each end with a seal kit. The equipment is designed to be connected to a supply by means of suitable certified cable entries and junction boxes in accordance with the manufacturer's installation instructions. The maximum surface temperature is dependent on the maximum permissible workpiece temperature as shown in the following tables:

Table A		Maximum Permissible Workpiece Temperature					
Maximum surface temperature:		T6	T5	T4	T3	T2	T1
Product type	Nominal output (W/m)	T85 °C	T100 °C	T135 °C	T200 °C	T300 °C	T300 °C
PHT... N	10	44	61	102	180	275	275
	30	-	-	24	116	246	246
	50	-	-	-	48	200	200
	70	-	-	-	-	144	144
PHT...NF	10	40	60	105	186	275	275
	30	-	-	22	132	255	255
	50	-	-	-	63	215	215
	70	-	-	-	-	168	168

Table B		Maximum Permissible Workpiece Temperature					
Maximum surface temperature:		T6	T5	T4	T3	T2	T1
Product type	Nominal output (W/m)	T85 °C	T100 °C	T135 °C	T200 °C	T300 °C	T300 °C
PHT... N	10	50	66	108	186	275	275
	30	-	-	42	133	258	258
	50	-	-	-	75	220	220
	70	-	-	-	29	178	178
PHT...NF	10	48	68	113	190	275	275
	30	-	-	43	150	265	265
	50	-	-	-	95	231	231
	70	-	-	-	33	196	196

Table A: Stabilised design system or Protective System

Table B: Protective system with Heat Trace 'Powermatch' power controller

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Variation 1 - This variation introduced the following changes:

i. The manufacturer's address was changed

From:	Heat Trace Limited Tracer House Cromwell Road Bredbury Stockport SK6 2RF UK	To:	Heat Trace Limited Meres Edge Chester Road Helsby Frodsham WA6 0DT UK
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ii. The braid diameter on the cables was altered.

Variation 2 - 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 IEC 60079-31:2008, 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.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	07 March 2003	53A8908	The release of prime certificate.
1	25 April 2006	51A14380	The introduction of Variation 1.
2	01 June 2010	R21959A/00	This Issue covers the following changes: <ul style="list-style-type: none">All previously issued certification was rationalised into a single certificate, Issue 2, Issues 0 to 1 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 2.

15 SPECIAL CONDITIONS FOR SAFE USE

None

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16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed 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 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 IEC 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 IEC 60079-30-1:2007 clause 5.2.1.
- 17.5 The manufacturer shall verify the output rating for each cable manufactured in accordance with IEC 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 02ATEX3078
Equipment: Powerheat PHT Constant Power Heating Cable
Applicant: Heat Trace Limited



Issue 0

Number	Sheet	Rev.	Date	Description
HC2900/s	1 of 1	0	14 Oct 02	PHT specification
BES2-PL	1 of 1	A	06 Mar 00	BES2 – End seal reference list
BES3-PL	1 of 1	B	06 Feb 01	BES3 – End seal reference list
BPS2-PL	1 of 1	B	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

Issue 1

Number	Sheet	Rev	Date (Sira stamp)	Description
HC2900/S	1 of 1	1	25 April 06	Powerheat PHT

Issue 2

Number	Sheet	Rev	Date (Sira stamp)	Description
HC2900/S	1 of 1	2	25 May 10	Powerheat PHT

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