



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 12ATEX1322X** Issue: **0**

4 Equipment: **Thermal Immersion Heaters Type TIHnn nnn nnnn EXD-s**

5 Applicant: **Thermal Electric Elements**

6 Address: **7 Buckman Close
Toormina
New South Wales
Australia**

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 60079-1:2007

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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:



I M2
Ex d I Mb



II 2G
Ex d IIB T* Gb
Ex d IIB+H₂ T* Gb

*T rating is governed by thermal protection setting and ranges from T6 to T3

Project Number 26175

C Ellaby
Deputy Certification Manager

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The Range of Flameproof immersion heaters are made from stainless steel and consist of a welded cylindrical main enclosure with a bolt on cover. The length of the main enclosure is the same for all models, with each model varying in diameter and wall thickness. The main enclosure consists of a cylindrical section with a welded base plate at one end and a flange at the other. The cover is fastened to the flange by means of M6 socket head cap screws. Sealing of the cover is achieved via an O-ring fitted in a groove in the flange. Cable entry to the enclosure is via threaded bosses welded to the side wall of the main enclosure. The heater assembly has the option of being manufactured in either stand-off or non stand-off welded base configurations. Figure 1 shows a Model No Description and Table 1 lists the models in the range for non stand-off configuration. The external surface temperature is controlled and limited by either a push button thermostat or a RTD (with N322 digital controller) fitted within the heater enclosure. Tables 2 and 3 list the temperature classification and set points for a push button thermostat or a RTD (with N322 digital controller), respectively.

Figure 1

Model No Description (TIHnn nnn nnnn EXD-s)

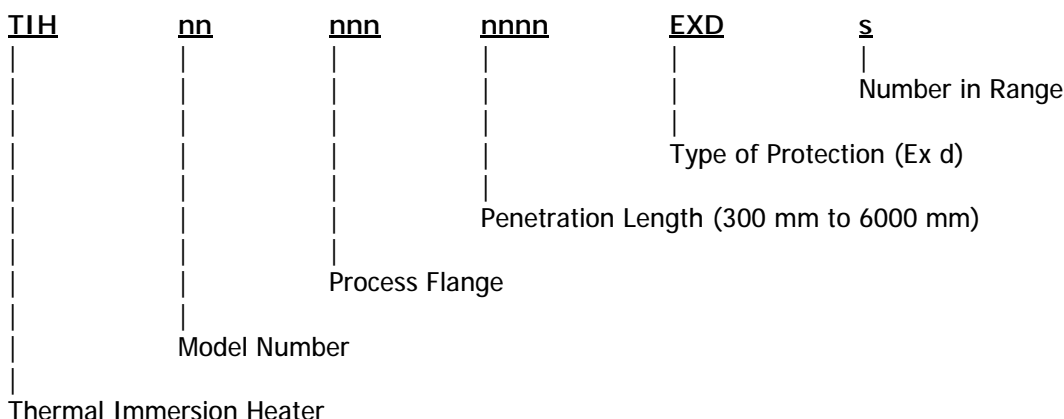


Table 1

Models & maximum ratings

Model No	Max Power [kW]	Flange size (non stand-off configuration)*	Max No of Elements
TIH01	10	50NB	1
TIH02	30	100NB	3
TIH03	90	150NB	9
TIH04	150	200NB	15
TIH05	230	250NB	23
TIH06	360	300NB	36
TIH07	430	350NB	43

*-stand-off configuration flange sizes are as per end user's requirements.

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Table 2

Temperature classification & thermal set point with push button thermostats

Temperature Class	Maximum Temperature Setting [°C], for model						
	TIH01	TIH02	TIH03	TIH04	TIH05	TIH06	TIH07
T6	80	80	80	80	80	80	80
T5	90	90	90	90	90	95	95
T4, T3 and Group I applications	110	110	130	130	130	130	130

Table 3

Temperature classification & thermal set point with RTD & N322 digital controller

Temperature Class	Maximum Temperature Setting [°C], for model						
	TIH01	TIH02	TIH03	TIH04	TIH05	TIH06	TIH07
T6	75	75	80	80	80	80	80
T5	90	90	95	95	95	95	95
T4, T3 and Group I applications	110	110	130	130	130	130	130

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	14 November 2012	R26175A/00	The release of the prime certificate.

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

- 15.1 The M6 fastener used in the apparatus must have minimum yield strength of 1200 MPa.
- 15.2 Dimensions of flameproof joints are other than the values specified in Table 2 of the EN 60079-1:2007, and are listed in the manufacturer's document EXM001.1.

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.

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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 Each enclosure shall be subjected to routine pressure test for at least 10 s, as required by clause 15.1.3 of EN 60079-1:2007, there shall be no damage or permanent deformation as a result of the test at a pressure of not less than:

Model Number	Pressure [kPa]
TIH01	1355
TIH02	1355
TIH03	955
TIH04	1258
TIH05	1106
TIH06	1272
TIH07	1159

- 17.4 All cable glands and blanking elements fitted by the manufacturer shall be suitably certified and shall provide ingress protection of a minimum of IP66, in order to maintain the degree of protection of IP66 for the enclosure.
- 17.5 The equipment intended for Gas group IIB+H2 use is for ferrule configuration only and not allowed when fitted with compression fittings.
- 17.6 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.
- 17.7 The manufacturer shall take all reasonable steps to ensure that the user/installer complies with the special conditions for safe use associated with the Thermal Immersion Heaters, in addition, the manufacturer shall provide the user/installer with an appropriate copy of the certificate for each certified device that is fitted within the equipment

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Certificate Annexe

Certificate Number: Sira 12ATEX1322X
Equipment: Thermal Immersion Heaters
Type TIHnn nnn nnnn EXD-s
Applicant: Thermal Electric Elements



Issue 0

Drawings/Documents	Sheets	Rev.	Date (Sira Stamp)	Title
EXdCERT-TSPEC001.01	1 of 3	F	14 Nov 12	Ex'd' Certification Technical Specification Legend
EXdCERT-TSPEC001.02	2 of 3	G	14 Nov 12	Ex'd' Certification Exd Flange Specification Tables
EXdCERT-TSPEC001.03	3 of 3	G	14 Nov 12	Ex'd' Certification Exd Flange Specification Tables
EXdCERTCFIT001.01	1 of 2	C	14 Nov 12	Compression Fitting To Suit Φ 11mm Element
EXdCERTCFIT001.02	2 of 2	B	14 Nov 12	Compression Fitting To Suit Φ 8mm Element
EXdCERT-ELE001.01	1 of 2	B	14 Nov 12	Ex'd' Certification Wiring Schematic Option 1
EXdCERT-ELE001.02	2 of 2	H	14 Nov 12	Ex'd' Certification Wiring Schematic Option 2
EXdATCERT-GAD001.01	1 of 1	E	14 Nov 12	Ex'd' Certification Configuration Φ 7.9mm Elements With Ferrules
EXdATCERT-GAD001.02	1 of 1	F	14 Nov 12	Ex'd' Certification Configuration 3/8" NPT Compression Fittings
EXdATCERT-GAD001.03	1 of 1	G	14 Nov 12	Ex'd' Certification Configuration Φ 7.9mm Elements With Ferrules & Standoff
EXdATCERT-GAD001.04	1 of 1	G	14 Nov 12	Ex'd' Certification Configuration 3/8" NPT Compression Fitting & Standoff
EXdCERT-GAD001.05	1 of 1	F	14 Nov 12	Ex'd' Certification Configuration Part Details
EXdCERT-PNUM001.01	1 of 1	B	14 Nov 12	EXd Certification Part Number Convention
EXdCERT-ELE002.01	1 of 4	A	14 Nov 12	EX'd' Certification 050NB Electrical Layout
EXdCERT-ELE002.02	2 of 4	A	14 Nov 12	EX'd' Certification 150NB Electrical Layout
EXdCERT-ELE002.03	3 of 4	A	14 Nov 12	EX'd' Certification 250NB Electrical Layout
EXdCERT-ELE002.04	4 of 4	A	14 Nov 12	EX'd' Certification 350NB Electrical Layout
EXdCERT-FPATH001.01	1 of 2	D	14 Nov 12	Ex'd' Certification Flamepath Through Compression Fitting
EXdCERT-FPATH001.02	2 of 2	D	14 Nov 12	Ex'd' Certification Flamepath Through Lid, Screw & O-Ring
EXdATCERT-RPLAT0011	1 of 1	A	14 Nov 12	EXd Certification Exd Rating Plate
EXdATCERT-GAD0021	1 of 2	C	14 Nov 12	Ex'd' Certification IIB+H2 Configuration
EXdATCERT-GAD0022	2 of 2	C	14 Nov 12	Ex'd' Certification IIB+H2 With Standoff Config
EXM001.1	1-25	1.3	14 Nov 12	Installation, Operation and Maintenance Manual

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Sira Certification Service

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