



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 12ATEX3082X** Issue: **2**

4 Equipment: **Series FE Flange Immersion Heaters**

5 Applicant: **Watlow Electric Manufacturing Company**

6 Address: **6 Industrial Loop Road
Hannibal
Missouri 63401
USA**

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 60079-7:2007

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:



II 2G

Ex e IIC T1-T6 Gb

Ta = -20°C to 60°C

Project Number 70007115

A C Smith
Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

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13 DESCRIPTION OF EQUIPMENT

Flange Immersion Heaters, Series FE, 690 Vac max, 120 W/sq in. max tubular.

The heaters comprise a range of sizes of Ex e certified metal enclosures with a number of heating elements and/or thermocouples installed such that the terminations of the elements are within the enclosure. The enclosure may also contain Ex e certified terminals, which provide connection facilities for thermocouples and externally mounted certified temperature transmitters. Alternatively, the externally mounted certified temperature transmitters may be used to terminate thermocouples.

The heater elements are installed into the enclosure via welded joints. Thermocouple elements are installed the same way. The interior of the heater may be fitted with an Ex e certified anti-condensation heater.

The heaters may be designated as follows:

FEaabccddeeffgg

Where:

- FE Flange Heater
- aa flange Size
- b element size
- cc enclosure size
- dd voltage
- eee power rating
- fff number of elements
- gg number of temperature sensors

The temperature class is related to the heating element temperature or process temperature, whichever is the highest.

Temperature class	Maximum surface/process temperature
T6	80°C
T5	95°C
T4	130°C
T3	195°C
T2	290°C
T1	440°C

Variation 1 - This variation introduced the following change:

- i. The recognition of a modified label drawing.



SCHEDULE

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Sira 12ATEX3082X
Issue 2

Variation 2 - This variation introduced the following changes:

- i. The introduction of the following alternative end seals with a maximum temperature rating of 130°C.
 - Protavic PNE - 47207
 - Polycast - 159
 - Polycast RTV - 710WE
- ii. The introduction of an alternative cable gland, Peppers CR-S Conduit Stopper Box.
- iii. The removal of a superfluous Special Condition For Safe Use.
- iv. The replacement of the assessment standard IEC 60079-0:2011 Ed 6 with EN 60079-0:2012.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	03 October 2012	R25153A/00	The release of the prime certificate.
1	16 June 2014	R70006328A	The introduction of Variation 1.
2	13 March 2015	R70007115A	The introduction of Variation 2.

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

- 15.1 The anti-condensation heater in the terminal box, when fitted, must be interlocked such that it cannot operate when the enclosure temperature is above 35°C.
- 15.2 The heating element supply circuit must include an electrical protection device in conformity with Annex D of EN 60079-7:2007.
- 15.3 The equipment must be provided with sensing devices to protect against zero fluid flow or empty vessel conditions.
- 15.4 Uncertified thermocouples and RTDs must be connected into intrinsically safe circuits.

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 The manufacturer shall ensure that the maximum enclosure temperature will not exceed the temperature defined in the table on Sheet 1 of the drawings listed on the certificate.
- 17.4 The manufacturer shall carry out a routine dielectric strength test at twice the rated voltage + 1000 V, for at least one minute, on every unit. There shall be no dielectric breakdown. Alternatively, the test may be carried out at 1.2 times the test voltage, but maintained for at least 100 ms.

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Certificate Annexe

Certificate Number: Sira 12ATEX3082X
Equipment: Series FE Flange Immersion Heaters
Applicant: Watlow Electric Manufacturing Company



Issue 0

Drawing No.	Sheets	Rev.	Date (Sira Stamp)	Title
T1111259	1 of 6	0	30 Sep 12	Specifications and Notes
T1111259	2 of 6	0	30 Sep 12	Element Descriptions
T1111259	3 of 6	0	30 Sep 12	General Arrangement
T1111259	4 of 6	0	30 Sep 12	Bus and Seal Arrangements
T1111259	5 of 6	0	30 Sep 12	Nameplate Details
T1111259	6 of 6	0	30 Sep 12	Miscellaneous Details
HAN-DES-001B	1 to 3	-	30 Sep 12	Watrod Specifications

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
T1111259	5 of 6	A	16 Jun 14	Hazardous Location Enclosure IEC & ATEX Ex 'e' Protection Method Nameplate Details

The sheet numbering was amended at Issue 2 to correct a typographical error.

Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
T1111259	1 of 6	A	10 Feb 15	Specifications and Notes
T1111259	3 of 6	A	10 Feb 15	General Arrangement
T1111259	4 of 6	A	10 Feb 15	Bus and Seal Arrangements
T1111259	5 of 6	B	10 Feb 15	Nameplate Details

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