



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 12ATEX3082X** Issue: **4**

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 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 60079-7:2015 + A1:2018

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-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 eb IIC T1-T6 Gb

Ta = -40°C...-35°C to +60°C

Project Number 80063139

Signed: J A May

Title: Director of Operations

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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 eb 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 eb 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 eb 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

The following Ex Auxiliary Equipment can be installed on the Series FE Flange Immersion Heaters. These equipment's are considered entirely separate and are not considered under the scope of this project:

Ex Equipment	Manufacturer	Certificate Number	Marking Code
IQ1000EV Z2, IQ2000EV Z2 IQ3000EV Z2,	Ice Qube Inc.	QPS16ATEX0002X-03	Ex nA nC IIC T6 Gc (without Crankcase Heater), Ex nA nC T5 Gc (with Crankcase Heater)



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Ex Equipment	Manufacturer	Certificate Number	Marking Code
IQ14000EV Z2, IQ17000EV Z2, IQ20000EV Z2	Ice Qube Inc.	QPS16ATEX0002X-03	Ex nA nC IIC T5 Gc (without Crankcase Heater), Ex nA nC IIC T4 Gc (with Crankcase Heater)
IQ4000EV Z2, IQ5000EV Z2, IQ6000EV Z2, IQ8000EV Z2, IQ10000EV Z2, IQ12000EV Z2	Ice Qube Inc.	QPS16ATEX0002X-03	Ex nA nC IIC T4 Gc (without Crankcase Heater) Ex nA nC IIC T3 Gc (with Crankcase Heater)
IQ4000EX, IQ5000EX, IQ6000EX, IQ8000EX, IQ10000EX, IQ12000EX	Ice Qube Inc.	CML 18ATEX1236X	Ex db eb ib IIB+H2 T4 Gb

Variation 1 - This variation introduced the following change:

- i. The recognition of a modified label drawing.

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.

Variation 3 - This variation introduced the following change:

- i. Add manufacturing facility Watlow Electric Manufacturing (Shanghai) Co., Ltd.
- ii. Update standard EN 60079-0:2012 to EN 60079-7:2015.
- iii. Add optional air conditioners for enclosure Ice Qube Inc. EX and EVZ2 series.
- iv. Change in minimum ambient temperature from -20°C to -40°C.
- v. Addition of alternate enclosure Eaton Crouse Hinds Ex-Cell series, Delvalle Tribex Series and Delvalle Luxorex series.
- vi. Evaluation of minor changes to drawing T1111259

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.

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Issue	Date	Report number	Comment
3	20 January 2020	1689	<ul style="list-style-type: none">• Transfer of certificate Sira 12ATEX3082X from Sira Certification Service to CSA Group Netherlands B.V.• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i>
4	29 September 2021	R80063138A	The introduction of Variation 3.

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.
- 15.5 When the Eaton Crouse Hinds Ex-Cell Series Enclosure is used and gland plates or enclosure panels are painted, the required entry holes provided by Cooper Crouse Hinds shall not have paint on the entry hole seal faces. If cable entry holes are added by the end user in the gland plates/enclosure panels, they shall ensure that any paint is removed from the entry hole seal faces.

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 MANUFACTURE

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 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

Issue 3. No new drawings were introduced.

Issue 4

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
T1111259	1 of 7	D	27 Sep 2021	Specifications and Notes
T1111259	2 of 7	D	27 Sep 2021	Element Descriptions
T1111259	3 of 7	D	27 Sep 2021	General Arrangement
T1111259	4 of 7	D	27 Sep 2021	Bus and Seal Arrangements
T1111259	5 of 7	D	27 Sep 2021	Nameplate Details
T1111259	6 of 7	D	27 Sep 2021	"eb" Protection Method Miscellaneous Details
T1111259	7 of 7	D	27 Sep 2021	Type Nomenclature Scheme

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