



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEX Scheme visit [www.iecex.com](http://www.iecex.com)

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Status: **Current** Issue No: 0

Date of Issue: 2019-12-12

Applicant: **EXHEAT LIMITED**  
Thrextton Road Industrial Estate  
Watton, Thetford, Norfolk  
IP25 6NG  
United Kingdom

Equipment: **HEF Range of Anti Condensation Heaters**

Optional accessory:

Type of Protection: **Increased Safety Ex eb (Associated equipment Ex db, Ex mb)**

Marking: Ex db\* eb mb\* IIC T4...T3 Gb  
-55°C ≤ Tamb ≤ +80°C  
-50°C ≤ Tamb ≤ +80°C with either thermostat option  
\* See Equipment Description  
IECEX ITS 19.0024X

Approved for issue on behalf of the IECEX  
Certification Body:

**P Moss**

Position:

**Certification Officer**

Signature:  
(for printed version)

Date:

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**Intertek Testing & Certification Limited**  
ITS House, Cleeve Road  
Leatherhead  
Surrey, KT22 7SA  
United Kingdom



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Manufacturer: **EXHEAT Industrial Ltd**  
Threxton House, Threxton Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK  
**United Kingdom**

Additional  
manufacturing  
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

## STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

## TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[GB/ITS/ExTR19.0009/00](#)

Quality Assessment Report:

[FR/LCI/QAR06.0005/11](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The HEF type anti-condensation heaters are rated for use within hazardous areas as designated below. They are designed to be gentle air warmers for within small enclosures or cabinets and for air application only.

The HEF type air warmers are composed of the following components:

1. Outer casing (stainless steel)
2. Trace heat cable (either Option 1 or 2) – IECEx BAS 06.0045X and IECEx FMG 12.0004X.
3. Splice joint assembly
4. Supply Cable (either Option 1, 2, 3 or 4)
5. Optional FXT Range in-line thermostat of either Ex d or Ex m. – IECEx SIR 17.0082X

A gap analysis has been performed to ensure all special conditions are complied with during the construction of the HEF heaters.

The outer casing is made from stainless steel which has perforated top, bottom and sides to aid air flow. Once the trace heat cable is installed within the heater and the splice joint is made and tested, the lid of the casing is riveted on, allowing no access to the joint by the end user. From the splice joint a 'flying lead' of a 3-core cable is installed for the client connection into suitable connections.

The trace heat cable used within the HEF is either of Option 1: QTVR or Option 2: Thermon HTSX variety. Proprietary ends and sleeves are used within the splice joint and end of the cable. The cable is coiled within the HEF and sits between cable supports that protrude from the casing bottom half. The supply cable is supported and clamped within the HEF casing so that the cable cannot be pulled out.

The splice joint assembly consists of the following:

Two legs of the trace heat cable are crimped to one side of the 'heat shrink through crimps' and the braid of the trace heat cable is also placed in a 'heat shrink through crimp'. The incoming supply cable is then connected to the 'heat shrink through crimps' using ferrule crimps first, then the ferrule crimps are crimped within the 'heat shrink through crimps', once all three 'heat shrink through crimps' are crimped and checked, they are heated to be shrunk into place.

During this process of crimping, a heater casing internal earth wire is installed with a ferrule crimp to the braid of the trace heat cable for connection to the product internally, this earth is then secured to the casing.

The whole splice construction is then covered in a heat shrink sleeving, which is shrunk to encase the whole joint. This sleeving has additional glue inside which, when shrunk into place, fills any gaps that are possibly there.

The supply cable is a 3 core Supply Cable of either of the following options:

Option 1: 3 core (2 core and earth) white flex in accordance with BS6500

Option 2: 3 core (2 core and earth) Black Marine and offshore spec flex as BS6883

Option 3: 3 core (2 core and earth) heat proof silicone cable OLFLEX HEAT 180.

Option 4: 3 core (2 core and earth) flex as used within the FXT range of thermostats, when the thermostat option is chosen.

Equipment is marked Ex eb when standard heater is provided; when the heater is fitted with (DI) thermostat (IECEX SIR 17.0082X), the heater is marked "Ex db eb"; when the heater is fitted with (M) thermostat (IECEX SIR 17.0082X), the equipment is marked "Ex eb mb"

## SPECIFIC CONDITIONS OF USE: YES as shown below:

- The HEF type heater (with or without an additional in-line thermostat) must be installed within an enclosure with the minimum of IP54 protection.
- The Flying lead on the HEF type heater (with or without an additional in-line thermostat) must be terminated within any IECEx Zone 1 certified enclosure, or within a non-hazardous area.
- The HEF type heater shall be earthed to the enclosure which it is installed.

When either the FXT-M or FXT-D thermostat is fitted to the HEF type heater the following conditions also apply;

- The equipment is not field serviceable by the user and shall not be opened;
- The equipment shall be installed so that pulling, flexing or mechanical damage of the cable is prevented;
- The equipment has non-conductive surfaces which are a potential electrostatic charging hazard – see the instructions for guidance (FXT-M thermostat only);



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- The equipment shall be supplied via a fuse that is mounted externally in a safe area and rated at 277 V ac, 6 A maximum. The fuse shall have a breaking capacity which exceeds the prospective short circuit current of the supply (FXT-M thermostat only).

Routine test see annex.

**Annex:**

[Annex IECEx ITS 19.0024X.pdf](#)



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<b>Annex No. 1</b>		

## Routine testing:

In accordance with Clause 6.1 of IEC 60079-7 each HEF type heater shall be subjected to a dielectric strength test of 1000V + (2\* Rated Voltage (rms)) applied between live/neutral and case for a period of 60s. Alternatively, the test may be carried out at 1.2x the test voltage, maintained for at least 100ms. Results must be recorded.

<b>Manufacturer's documents</b>			
Title:	Drawing No.:	Rev. Level:	Date:
ATEX & IECEX Certified HEF (-T) Range General Arrangement Drawing Industrial Product 3 Sheets	2004-46-01	08	25.11.19
HEF-T (optional Thermostat) Range General Arrangement Drawing Industrial Product ATEX & IECEX Certified	2004-46-02	02	14.08.19
HEF & HEF-T Type Anti Condensation Heater Nameplate Markings Industrial Product ATEX & IECEX Certified	2004-46-41	06	14.08.19
HEF (-T) Series Anti-Condensation Heater Self Regulating Heating Cable Assembly Detail ATEX & IECEX Certified	2004-46-03	04	14.08.19
Installation, Operation & Maintenance Manual HEF Increased Safety Anti-Condensation Heater	-	Second Edition	Nov 2019

Note: An \* is included before the title of documents that are new or revised.

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