

EU-TYPE EXAMINATION CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

- EU-Type Examination Certificate Number:** ITS19ATEX104973X **Issue 00**
- Product:** HEF30/50/100/200/500 Anti-Condensation Heaters
- Manufacturer:** EXHEAT Industrial Ltd
- Address:** Threxton House, Threxton Road Industrial Estate, Watton, Norfolk, IP25 6NG, UK
- This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II of the Directive.
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2018 and EN 60079-7:2015+A1:2018 except in respect of those requirements referred to within item 14 of the Schedule.
- If the sign "X" is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
- This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- The marking of the product shall include the following:

II 2 G Ex db* eb mb* IIC T4...T3 Gb



-55°C ≤ Tamb ≤ +80°C

-50°C ≤ Tamb ≤ +80°C Fitted with either (DI) or (M) thermostat option.

*See section 11

Certification Officer: _____
P Moss

Date: _____
12 December 2019

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11. Description of Equipment or Protective System

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) – Baseefa06ATEX0185X and FM12ATEX0014.
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. – SIR17ATEX1356X

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.

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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 (SIR17ATEX1356X), the heater is marked "Ex db eb"; when the heater is fitted with (M) thermostat (SIR17ATEX1356X), the equipment is marked "Ex eb mb"

12. Report Number

Intertek Report: 104010162CHE-001 Dated: 05 December 2019.

13. Special Conditions of Certification

(a). Special Conditions of Use

- 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);
- 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).

(b). Conditions of Manufacture – Routine test

In accordance with Clause 6.1 of EN 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.

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14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 104010162CHE-001 Dated: 05 December 2019.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
ATEX & IECEX Certified HEF (-T) Range General Arrangement Drawing Industrial Product 3 Sheets	2004-46-01	07	14.08.19
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