



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx ULD 16.0002X

Issue No: 3

Certificate history:

Status: **Current**

Issue No. 3 (2018-04-26)

Issue No. 2 (2017-10-24)

Date of Issue: **2018-04-26**

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Issue No. 1 (2017-09-29)

Issue No. 0 (2016-12-02)

Applicant: **EXHEAT Limited**  
Thrextan Road Industrial Estate  
Watton - Thetford - Norfolk  
IP25 6NG  
**United Kingdom**

Equipment: **FX range of Enclosure Heaters, FXB, FXH, FXS**

*Optional accessory:*

Type of Protection: **Flameproof "db", Dust Ignition Protection by Enclosure "tb", and Encapsulation "mb"**

Marking:

Ex db IIC T4...T3 Gb

Ex db mb IIC T4...T3 Gb

Ex tb IIIC T135°C...T200°C Db

Ex tb mb IIIC T135°C...T200°C Db

Please see Annex for rated ambient temperature range.

*Approved for issue on behalf of the IECEx  
Certification Body:*

Katy A. Holdredge

*Position:*

Senior Staff Engineer

*Signature:  
(for printed version)*

*Date:*

2018-04-26

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**UL International Demko A/S**  
Borupvang 5A,  
DK-2750 Ballerup  
Denmark





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Manufacturer: **EXHEAT Limited**  
Thrextan Road Industrial Estate  
Watton - Thetford - Norfolk  
IP25 6NG  
United Kingdom

Additional Manufacturing location(s):

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 apparatus 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-18 : 2014</b> Edition:4.0	Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
<b>IEC 60079-31 : 2013</b> Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical 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:

[DK/ULD/ExTR16.0002/03](#)

Quality Assessment Report:

[FR/LCI/QAR06.0005/10](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The products in the FX range consist of an extruded Aluminium finned body with an electrical cartridge heating element fitted within a central bore. The range uses fixed resistance and self-regulating heating elements.

Please see Annex for additional information.

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

- No repair to the flameproof joints is permitted.
- Special precautions are necessary to reduce the risk due to electro-static discharge. Refer to the installation/operation instructions.
- The equipment is not field serviceable by the user and shall not be opened.
- Models fitted with thermostat FTX-M or FTX-DI shall be installed so that pulling, flexing or mechanical damage of the cable is prevented.

The following additionally apply to Models fitted with thermostat FTX-M

- The equipment shall be installed in a certified enclosure, suitable for hazardous locations, so that they are protected from impact and exposure to direct sunlight.
- The equipment shall be supplied via a fuse that is mounted externally in a safe area and rated at 277Vac, 6 Amp maximum. The fuse shall have a breaking capacity which exceeds the prospective short circuit current of the supply.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 1: Update to manufacturer's machining drawings.

Issue 2: Revision to ambient temperature range; updates to drawings.

Issue 3: Option for an encapsulated or flameproof thermostat has been added to the nomenclature.  
Minimum length of Omerin Silicable has reduced from 3000mm to 100mm.

**Annex:**

[Annex to IECEx ULD 16.0002X Issue 3.pdf](#)



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## TYPE DESIGNATION

FXB type, fixed resistance heaters must be mounted with the fins oriented vertically to allow for optimal airflow and convection.

FXH type, fixed resistance heaters may be mounted either vertically or flat to the base of the enclosure.

FXS type, self-regulating heaters may be mounted vertically, horizontally or flat on the base of the enclosure.

An electrical supply cable is fitted to the heater using a suitably certified cable gland. The cable must be terminated in suitably certified terminals or enclosure for the area of use (terminals/enclosure not supplied with the heater).

Where a fixed resistance heating element is utilised, the assembled heater shall be able to run at the specified temperature class indefinitely.

All heaters may additionally be fitted with either an encapsulated or flameproof thermostat, as defined by the nomenclature below. For thermostat certification, see IECEX SIR 17.0082X, Issue 0.

## Product nomenclature

**Model**            **FXB-FD-XXX-M-X**  
                         **I    II   III IV V**

### I - Enclosure Type

**FXB** – Block type extruded enclosure heater with fins on front and back, available in 225 mm and 325 mm lengths, all other dimensions are the common to both lengths.

**FXH** – Flat block type enclosure heater with fins on front face only, available in 90 mm and 225 mm lengths. Models use same fin design but differ significantly in size and features.

**FXS** - Self-regulating type enclosure heater that does not follow the dimensional specifications of the FXB or FXH models.

Each of the 4 sizes of heater will be available in a range of fixed resistance and self-regulating variants.

The FXS enclosure is only available with the self-regulating element.

### II – Heater Type

**FD** – Fixed resistance heater element

**SR** – Self-regulating heater element



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## III – Heater Rating

**XXX** – Heater Duty in Watts, e.g. 500

**See temperature table for each model maximum wattage**

## The Following Is Optional

### IV – Thermostat

**M** – Encapsulated FXT-M thermostat

**D** – Flameproof FXT-DI thermostat

### V – Thermostat Set Point

**X** – Thermostat Set Point (°C), e.g. 5

**See temperature table for maximum set point.**

## TEMPERATURE RANGE

Maximum ambient temperature range -60°C to +180°C  
Depending upon configuration and construction materials.

When fitted with FXT-M or FXT-DI thermostats, the minimum ambient temperature is limited to -50°C

The relation between ambient temperature and the assigned temperature class is as follows:

When fitted with a Fixed Resistance Heater Element					
Body	Type	Max Rating	Extrusion Size	Maximum Ambient Temperature	Temperature Class Group II / III
FXB	FD	511W	325	+40°C	T3 / 200°C
FXB	FD	252W	325	+40°C	T4 / 135°C
FXB	FD	252W	325	+80°C	T3 / 200°C
FXB	FD	376W	225	+40°C	T3 / 200°C
FXB	FD	210W	225	+40°C	T4 / 135°C
FXB	FD	210W	225	+80°C	T3 / 200°C
FXH	FD	204W	225	+40°C	T3 / 200°C
FXH	FD	135W	225	+40°C	T4 / 135°C
FXH	FD	135W	225	+80°C	T3 / 200°C
FXH	FD	85W	90	+40°C	T3 / 200°C
FXH	FD	45W	90	+40°C	T4 / 135°C
FXH	FD	45W	90	+80°C	T3 / 200°C



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When fitted with a Self-Regulating Heater Element					
Body	Type	Nominal Rating	PTC Chip Rated Temperature	Maximum Ambient Temperature	Temperature Class Group II / III
FXS	SR	-	110°C	+130°C	T4 / 135°C
FXB	SR	240W	110°C	+130°C	T4 / 135°C
FXH	SR	100W	110°C	+130°C	T4 / 135°C
FXS	SR	-	180°C	+160°C/+180°C*	T3 / 200°C
FXB	SR	350W	180°C	+160°C/+180°C*	T3 / 200°C
FXH	SR	200W	180°C	+160°C/+180°C*	T3 / 200°C

\* When cable gland is rated to a minimum of 200°C

When fitted with a Fixed Resistance Heater Element and FXT-M Encapsulated Thermostat					
Body	Type	Max Rating	Extrusion Size	Maximum Ambient Temperature	Temperature Class Group II / III
FXB	FD	511W	325	+40°C	T3 / 200°C
FXB	FD	252W	325	+40°C	T4 / 135°C
FXB	FD	252W	325	+80°C	T3 / 200°C
FXB	FD	376W	225	+40°C	T3 / 200°C
FXB	FD	210W	225	+40°C	T4 / 135°C
FXB	FD	210W	225	+80°C	T3 / 200°C
FXH	FD	204W	225	+40°C	T3 / 200°C
FXH	FD	135W	225	+40°C	T4 / 135°C
FXH	FD	135W	225	+80°C	T3 / 200°C
FXH	FD	85W	90	+40°C	T3 / 200°C
FXH	FD	45W	90	+40°C	T4 / 135°C
FXH	FD	45W	90	+80°C	T3 / 200°C

When fitted with a Self-Regulating Heater Element and FXT-M Encapsulated Thermostat					
Body	Type	Nominal Rating	PTC Chip Rated Temperature	Maximum Ambient Temperature	Temperature Class Group II / III
FXS	SR	-	110°C	80°C	T4 / 135°C
FXB	SR	240W	110°C	80°C	T4 / 135°C
FXH	SR	100W	110°C	80°C	T4 / 135°C
FXS	SR	-	180°C	80°C	T3 / 200°C
FXB	SR	350W	180°C	80°C	T3 / 200°C

When fitted with a Fixed Resistance Heater Element and FXT-DI Flameproof Thermostat						
Body	Type	Max Rating	Extrusion Size	Maximum Ambient Temperature	Maximum Set Point	Temperature Class Group II / III
FXB	FD	511W	325	+40°C	140°C	T3 / 200°C
FXB	FD	252W	325	+40°C	75°C	T4 / 135°C
FXB	FD	252W	325	+80°C	140°C	T3 / 200°C
FXB	FD	376W	225	+40°C	140°C	T3 / 200°C
FXB	FD	210W	225	+40°C	75°C	T4 / 135°C
FXB	FD	210W	225	+80°C	140°C	T3 / 200°C
FXH	FD	204W	225	+40°C	140°C	T3 / 200°C
FXH	FD	135W	225	+40°C	75°C	T4 / 135°C
FXH	FD	135W	225	+80°C	140°C	T3 / 200°C
FXH	FD	85W	90	+40°C	140°C	T3 / 200°C
FXH	FD	45W	90	+40°C	75°C	T4 / 135°C
FXH	FD	45W	90	+80°C	140°C	T3 / 200°C



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When fitted with a Self-Regulating Heater Element and FXT-DI Flameproof Thermostat						
Body	Type	Nominal Rating	PTC Chip Rated Temperature	Maximum Ambient Temperature	Maximum Set Point	Temperature Class Group II / III
FXS	SR	-	110°C	+130°C	75°C	T4 / 135°C
FXB	SR	240W	110°C	+130°C	75°C	T4 / 135°C
FXH	SR	100W	110°C	+130°C	75°C	T4 / 135°C
FXS	SR	-	180°C	+160°C/+180°C*	125°C	T3 / 200°C
FXB	SR	350W	180°C	+160°C/+180°C*	125°C	T3 / 200°C
FXH	SR	200W	180°C	+160°C/+180°C*	125°C	T3 / 200°C

\* When cable gland is rated to a minimum of 200°C

When using fixed resistance elements:

$-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +40^{\circ}\text{C}$

or

$-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +80^{\circ}\text{C}$ .

When using fixed resistance elements with FXT-M or FXT-DI thermostat:

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +40^{\circ}\text{C}$

or

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +80^{\circ}\text{C}$ .

When using self-regulating elements:

$-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +130^{\circ}\text{C}$

$-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +160^{\circ}\text{C}$

Or

$-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +180^{\circ}\text{C}$

When using self-regulating elements with FXT-DI thermostat:

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +130^{\circ}\text{C}$

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +160^{\circ}\text{C}$

Or

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +180^{\circ}\text{C}$

When using self-regulating elements with an FXT-M thermostat:

$-50^{\circ}\text{C} \leq T_{\text{amb}} \leq +80^{\circ}\text{C}$

## PARAMETERS RELATING TO THE SAFETY

FXB Fixed Resistance with a 325mm extrusion – 511W, 600VAC

FXB Fixed Resistance with a 225mm extrusion – 376W, 600VAC

FXH Fixed Resistance with a 225mm extrusion – 204W, 600VAC

FXH Fixed Resistance with a 90mm extrusion – 85W, 600VAC

FXS, FXB, FXH Self Regulating – 265VAC

Rated up to 15A max for the range.

When Fitted with FXT-M – 277VAC, 4.8A Max.

240VAC, 3.3A Max.

120VAC, 6A Max.

When Fitted with FXT-DI – 277VAC, 9A Max.





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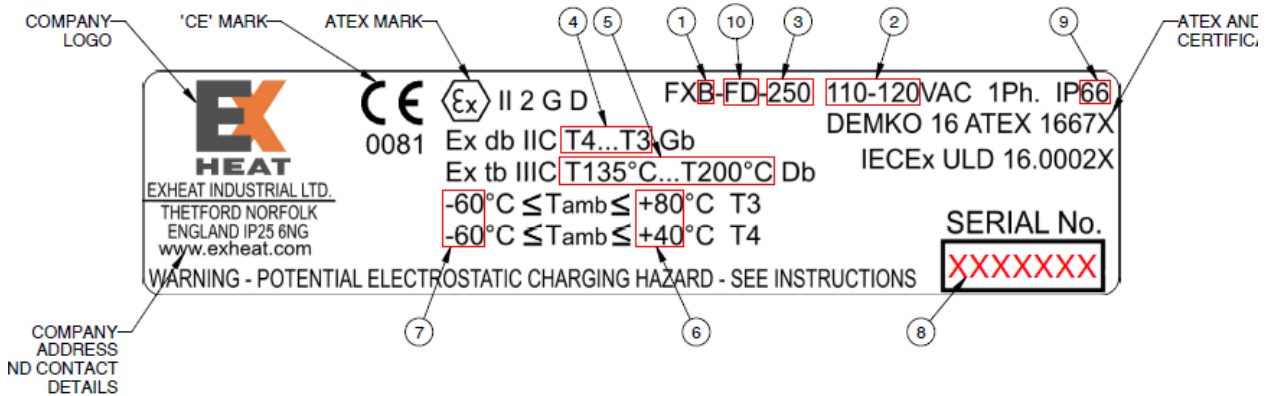
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## MARKING

Typical heater block nameplate



Typical nameplate when fitted with a thermostat

FOR FLAMEPROOF INLINE THERMOSTAT  
Ex mb TO BE REMOVED

