



国家防爆

Electrical Apparatus for Explosive Atmospheres

CERTIFICATE OF CONFORMITY

Cert. No.: CNEx16.4048X

Manufacturer EXHEAT Ltd
 Threxton Road Industrial Estate
 Watton, Thetford, Norfolk
 IP25 6NG
 United Kingdom

Name of Product FP Heaters

Type of Product FP, FP(G) & FP(A) Liquid Gas or Air Immersion Heaters

Marking Ex db IIC T1-T6 Gb
 Ex db eb IIC T1-T6 Gb
 Ex tb IIIC T...°C Db
 (see Annex for details)

Drawing No. 806 Rev 0, dated 2015-03-24

The drawings, technical documents and the samples are verified and certified according to standard(s) for safety as below:

- GB 3836.1-2010 Explosive atmospheres - Part 1: Equipment - General requirements
- GB 3836.2-2010 Explosive atmospheres - Part 2: Equipment protection by flameproof enclosure "d"
- GB 3836.3-2010 Explosive atmospheres - Part 3: Equipment protection by increased safety "e"
- IEC 60079-31: 2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Note

1. This certificate is only valid in combination with the related Annex (4 pages).
2. Please read and understand the special conditions for safe use as stated in the Annex to this certificate.

Valid Date From Dec 20, 2016 to Dec 19, 2021

Issue Date Dec 20, 2016

Director



CHINA NATIONAL QUALITY SUPERVISION AND TEST CENTRE
FOR EXPLOSION PROTECTED ELECTRICAL PRODUCTS

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This Annex to certificate CNEx 16.4048X covers the following models:

Liquid Air Gas Heaters type FP, FP(G) & FP(A) Liquid Gas or Air Immersion Heaters.

The heater comprises a cylindrical enclosure having a threaded detachable cover, and a welded flange, all made of stainless steel, coated mild steel or titanium. The cover is secured by a locking screw.

Alternative arrangements allow a stand-off version of terminal box and allows the assembly of a second certified terminal box on the main terminal box. This product has been certified by LCIE (France), under certificate number IECEX LCI 06.0006X, Issue 6, dated 2016-06-30.

Ex marking: Ex db IIC T1-T6 Gb
Ex db eb IIC T1-T6 Gb *
Ex tb IIIC T...°C Db

Electrical data: Rated voltage*: 690V max.

(* depending on the explosion-proof components used)

Ambient temperature range.: -60°C...+60°C.

Temperature Class

Model	Temperature Class	Terminal box flange plate clearance (mm)	Maximum terminal box temperature (°C)	Flange plate fluid temperature (°C)
Stand off version	T6	40	70	75
	T5	40	80	90
	T4	40	80	125
	T3	100	130	190
	220°C	100	130	210
	T2	150	130	290
	T1	200	130	440
Non-stand off version	T1-T6	0	80	80

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Special Conditions for safe use:

1. All safety devices shall operate independently of any measurement or control devices required for operation. Resetting the safety devices shall only be manual.
2. The temperature classification is based on the flange temperature. This certificate does not cover the temperature of any part of the heating element inside the vessel or the heated vessel itself. Safety with regard to ignition risks due to hot surfaces inside and outside the vessel is a matter for the manufacturer, installer and/or user as appropriate.
3. The anti-condensation heaters must be wired in accordance with the manufacturer drawings.
4. The temperature classification may be invalidated unless the elements are completely immersed in the fluid. It is the responsibility of the manufacturer, installer and/or user, as appropriate, to ensure that an explosive atmosphere does not occur inside the vessel.
5. The installer and user must ensure that the terminal enclosure and its associated stand-off are not lagged.
6. Overtemperature thermostats shall be contained within the main certified flameproof terminal box 'd'.
7. Alternative arrangement, the terminal box can be equipped of a separated terminal box (minimum distance 75mm) for the connection of thermocouple or RTD's. This box must be a certified type for considered using (flameproof enclosure 'd', or increased safety 'e' or intrinsic safety 'i').
8. The elements ensuring the safety temperature shall be mounted within the main certified flameproof terminal box 'd'.
9. Supplementary special conditions for safe use for the FP...(A) and FP...(G):
 - the free ends of the temperature devices are to be suitably mechanically protected and terminated within suitable terminal junction facility.
 - the RTD/thermocouple assembly of FP...(A) or FP...(G) shall operate independently of any measurement or control devices required for operation, and comply with the relevant regulations for safety devices required for the safe functioning of equipment with respect to explosion risks. Resetting the safety devices shall only be manual.

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- 10. In the case of assembly with dummy flange, the assembly must be according to manufacturer's specifications mentioned in his technical file.
- 11. When equipment is painted, potential electrostatic charging hazard. Clean only with a wet cloth (or see instructions).
- 12. The flamepaths are specified in the manufacturer drawings.

Installation instructions:

Read and understand the Installation and Operation Manual.

Only certified cable glands and blanking elements are to be used, complying with GB 3836.3, rated minimum IP 64, suitable for the conditions of use and correctly installed

No thread adapters shall be used with blanking elements.

Routine tests:

Routine tests are required as follows:

- A routine dielectric strength test conform standard GB 3836.3-2010 is applicable to all Ex "e" terminal boxes
- According to clause 16.1 of standard GB 3836.2-2010, each welded thermostat pocket shall be submitted to an overpressure test of 30 bars during minimum 10 seconds.
- According to clause 16.1 of standard GB 3836.2-2010, each apparatus shall be submitted to an overpressure test during minimum 10 seconds:

Model	Value (bars)
FP4 - FP12	18,0
FP14 - FP24	21,5

- Alternative arrangement with supplementary terminal box: the alternative terminal box shall be submitted to routine tests defined in its certificate.

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Warnings:

- WARNING - DO NOT OPEN WHEN ENERGIZED
- WARNING - IF THE TEMPERATURE AT THE CABLE ENTRY EXCEEDS 70°C, HIGH TEMPERATURE CABLE SHALL BE USED
- WARNING - DO NOT OPEN IN THE PRESENCE OF AN EXPLOSIVE ATMOSPHERE



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Tel: 0377-63258564 Fax: 0377-63208175 Http://www.china-ex.com



国家防爆

防爆电气设备

防爆合格证

编号: CNEx16.4048X

制造单位 EXHEAT Ltd
Thrextan Road Industrial Estate
Watton, Thetford, Norfolk
IP25 6NG
United Kingdom

产品名称 防爆加热器

型号规格 FP, FP(G) & FP(A) 液态气或空气浸没式加热器

防爆标志 Ex db IIC T1-T6 Gb
Ex db eb IIC T1-T6 Gb
Ex tb IIIC T...°C Db
(详细信息见附页)

总装图号 806 (0版, 2015-03-24)

经对上述产品图样及技术文件的审查和样品检验, 确认符合下列标准:

- GB3836.1-2010 《爆炸性环境第1部分: 设备通用要求》
- GB3836.2-2010 《爆炸性环境第2部分: 由隔爆外壳“d”保护的的设备》
- GB3836.3-2010 《爆炸性环境第3部分: 由增安型“e”保护的的设备》
- IEC60079-31: 2013 《爆炸性环境第31部分: 设备粉尘点燃保护外壳“t”》

记 事

1. 本证书与相关附页一同使用时才视为有效。
2. 请仔细阅读并了解本证书附件中的安全使用条件, 附件共3页。

本证有效期 2016年12月20日至2021年12月19日

颁发日期 2016年12月19日

中心主任



国家防爆电气产品质量监督检验中心

地址: 中国河南省南阳市仲景北路20号 邮政编码: 473008

电话: 0377-63258564 传真: 0377-63208175 [Http://www.china-ex.com](http://www.china-ex.com)





国家防爆

防爆电气设备

防爆合格证(附页)

编号: CNEx16.4048X

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1. 产品描述:

FP、FP(G)系列液态气体或FP(A)系列液态气体或空气浸没式加热器。

产品由带有可拆卸螺纹盖的圆筒状壳体和焊接法兰组成, 材质均为不锈钢, 表面由低碳钢或钛涂覆。盖由锁紧螺栓固定。

产品接线盒还可以选择立式安装, 在这种情况下可以使用已取得防爆合格证的测温接线盒。

本产品已取得 LCIE (法国) 颁发的 IECEx 证书, 编号 IECEx LCI 08.0006X, 第 6 版, 颁发日期 2016-06-30。

2. 防爆标志:

Ex db IIC T1-T6 Gb

Ex db eb IIC T1-T6 Gb*

Ex tb IIIC T...°C Db

3. 电气参数:

额定电压*: 最大 690Vac

(*) 取决于采用的已取得防爆合格证的防爆部件

4. 使用环境温度:

-60 °C 至 +60 °C

5. 温度组别:

型号	温度组别	接线盒与凸缘板的距离(mm)	接线盒最高温度(°C)	凸缘板液体温度(°C)
立式安装	T6	40	70	75
	T5	40	80	90
	T4	40	80	125
	T3	100	130	190
	220°C	100	130	210
	T2	150	130	290
	T1	200	130	440
非立式安装	T1-T6	0	80	80

颁发日期 2016年12月19日

中心主任



国家防爆电气产品质量监督检验中心

地址: 中国河南省南阳市仲景北路20号 邮政编码: 473008

电话: 0377-63258564 传真: 0377-63208175 Http://www.china-ex.com



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6. 安全使用条件:

- 1) 测量或控制装置运行所要求的所有安全装置应独立运行, 安全装置的复位须手动操作。
- 2) 产品的温度组别划分取决于法兰温度, 本证书不涉及安装于外壳内部的任何加热元件或外壳的温度。与外壳内部或外壳热表面有关的点燃风险安全由制造商、安装人员和/或使用方负责。
- 3) 防冷凝加热器必须按照制造商图纸进行接线。
- 4) 在产品未完全浸入液体时, 其温度组别的划分可能无效。制造商、安装人员和/或使用方负责确保外壳内部不存在爆炸性环境。
- 5) 安装人员和使用者必须保证接线盒外壳及其相关支架的安装不滞后。
- 6) 超温保护(温度控制器)必须放置于已取得防爆合格证的主隔爆型接线盒内。
- 7) 另一种安装方法, 接线盒上可以再安装一个测温接线盒(接线盒间最小距离 75mm)用以连接热电偶或 RTD。接线盒必须为已取的防爆合格证的且与使用环境相适应的产品(防爆型式为隔爆型、增安型或本安型)。
- 8) 保证安全温度的测温 and 温度控制元件必须安装在已取的防爆合格证的主接线盒内。
- 9) 对于 FP...(A)和 FP...(G)型号的附加要求:
 - 测温装置的自由端应带有适当的机械保护且连接于适当的接线装置内。
 - 测量或控制装置运行所要求的 FP...(A)和 FP...(G)型号的热电偶或 RTD 应独立运行, 并符合相关与爆炸风险相关的安全装置安全运行的规定。安全装置的复位须手动操作。
- 10) 如果现场选用法兰, 安装时必须保证符合制造商的相关技术文件要求。
- 11) 当产品涂漆时, 应注意潜在的静电电荷危险。只能用湿布擦拭(或见说明书)。

颁发日期 2016年12月19日

中心主任



国家防爆电气产品质量监督检验中心

地址: 中国河南省南阳市仲景北路20号 邮政编码: 473008

电话: 0377-63258564 传真: 0377-63208175 [Http://www.china-ex.com](http://www.china-ex.com)



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防爆电气设备

防爆合格证(附页)

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12) 隔爆接合面的尺寸见制造商图纸。

7. 安装说明:

请仔细阅读并了解安装及使用说明。

采用的电缆引入装置和封堵元件须已取得防爆合格证, 符合 GB3836.2 或 GB3836.3 的要求, 防护等级不低于 IP66, 与使用环境相适应且正确安装。

螺纹变径接头不能与封堵元件一起使用。

8. 例行试验:

例行试验要求如下:

- 所有的增安型“e”接线盒必须通过 GB3836.3-2010 要求的介电强度试验。
- 按照 GB3836.2-2010 第 16.1 条要求, 所有焊接的超温保护(温度控制器)必须通过历时 10s 压力为 3.0MPa 的过压试验。
- 按照 GB3836.2-2010 第 16.2 条要求, 所有部件必须通过历时 10s 的过压试验。

型号	压力 (MPa)
FP4 - FP12	1.8
FP14 - FP24	2.15

- 可选的附加接线盒也须按照证书中的要求进行例行试验。

9. 警告:

- 警告-严禁带电开盖!
- 如果电缆引入口温度超过 70°C, 应采用耐高温电缆。
- 警告-有爆炸性气体时请勿打开!

颁发日期 2016 年 12 月 19 日

中心主任



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