# 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

Certificate No.: IECEx SIR 05.0068X

Issue No: 3

Certificate history:
Issue No. 3 (2018-01-08)
Issue No. 2 (2010-06-14)
Issue No. 1 (2007-02-14)



Status: **Current**

Date of Issue: **2018-01-08**

Applicant: **Pyroban Limited**
Endeavour Works
Dolphin Road
Shoreham – by – Sea
West Sussex BN43 6QG
**United Kingdom**

Equipment: **FPA16, FPA30 and FPA45 Alternator**
*Optional accessory:*

Type of Protection: **Flameproof**

Marking:

**FPA 16**
Ex db IIB T5 Gb (Tamb -20°C to 40°C)
Ex db IIB T4 Gb (Tamb -20°C to 60°C)
Ex tb IIIC T100 Db (Tamb -20°C to 40°C)
Ex tb IIIC T135 Db (Tamb -20°C to 60°C)

Refer to the Certificate Annexe for the marking relating to the other models

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

*Position:* Deputy Certification Manager

*Signature:*
*(for printed version)*

*Date:* 2018-01-08

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.

Certificate issued by:

**SIRA Certification Service**
**CSA Group**
**Unit 6, Hawarden Industrial Park**
**Hawarden, Deeside, CH5 3US**
**United Kingdom**

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|---|---|---|
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| Manufacturer: | **Pyroban Limited**<br>Endeavour Works<br>Dolphin Road<br>Shoreham – by – Sea<br>West Sussex BN43 6QG<br>**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 electrical 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:

| | |
|---|---|
| **IEC 60079-0 : 2011**<br>Edition:6.0 | Explosive atmospheres - Part 0: General requirements |
| **IEC 60079-1 : 2014-06**<br>Edition:7.0 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |
| **IEC 60079-31 : 2013**<br>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:

GB/SIR/ExTR06.0004/00 GB/SIR/ExTR07.0011/00 GB/SIR/ExTR10.0145/00
GB/SIR/ExTR17.0256/00

Quality Assessment Report:

GB/SIR/QAR06.0001/00

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**Schedule**

**EQUIPMENT:**

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

The FPA Alternator comprises a cast light alloy enclosure that contains an electrical stator and rotor along with regulation and rectification equipment. The enclosure comprises of two sections that are secured together with six M5 hexagonal socket cap head screws. The joint between the two enclosure parts forming a cylindrical flamepath. The rear part of the enclosure incorporates a threaded entry point, either M20 or M25 to allow the installation of suitably certified cable glands. The front portion of the casing incorporates a bearing housing that allows the alternator shaft to exit the enclosure via a cylindrical flamepath. A pulley is mounted externally.

The FPA Alternator range includes:

FPA16 - 24 V, 16 A
FPA30 - 12 V, 30 A
FPA45 - 12 V, 45 A

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

1. A suitable guard will be fitted to protect the FPA Alternator cooling fan from accidental ingress of foreign objects causing mechanical damage to the fan.
2. In mounting the FPA Alternator measures must be taken to ensure that a clearance of at least 5.0 mm is maintained between the fan and any other object.
3. Use fasteners with a yield stress ≥ 12.9 (10800 $N/mm^2$), where the 12.9 (10800 $N/mm^2$) is determined by applicable testing.
4. This equipment includes a non-metallic outer protective coating. To avoid the possibility electrostatic charges, cleaning must only be carried out with a damp cloth.
5. Refer to the Certificate Annexe for the critical dimentions of the flamepaths.

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

**This issue, issue 3, recognises the following changes; refer to the certificate annex to view a comprehensive history:**

1. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2004 Ed 4.0 and IEC 60079-1:2003 Ed 5.0 were replaced by IEC 60079-0:2011 Ed 6.0 and IEC 60079-1:2014 Ed 7.0. The following standard was added to the list IEC 60079-31:2013 Ed 2.0, the markings were updated accordingly and the Specific Conditions of Use were amended to recognise the new standards.
2. The introduction of dust explosive atmospheres into the scope of the certification, which introduces Ex tb IIIC T# Db coding within the marking.
3. The introduction of the following ambient and associated temperature classes:

FPA16
Ex db IIB T5 Gb (Tamb -20°C to 40°C)

FPA30
Ex db IIB T5 Gb (Tamb -20°C to 40°C)

FPA45
Ex db IIB T3 Gb (Tamb -20°C to 60°C)

**Annex:**

IECEx SIR 05.0068X Annexe Issue 3.pdf

| | |
|---|---|
| **Annexe to:** | **IECEx SIR 05.0068X Issue 3** |
| **Applicant:** | **Pyroban Ltd** |
| **Apparatus:** | **A Range of Flameproof Alternators**<br>**FPA16 24 V 16 A**<br>**FPA30 12 V 30 A,**<br>**FPA45 12 V 45 A** |

## Marking relating to the other models

**FPA30**
Ex db IIB T5 Gb (Tamb -20°C to 40°C)
Ex db IIB T4 Gb (Tamb -20°C to 60°C)
Ex tb IIIC T100 Db (Tamb -20°C to 40°C)
Ex tb IIIC T135 Db (Tamb -20°C to 60°C)

**FPA45**
Ex db IIB T4 Gb (Tamb -20°C to 50°C)
Ex db IIB T3 Gb (Tamb -20°C to 60°C)
Ex tb IIIC T135 Db (Tamb -20°C to 50°C)
Ex tb IIIC T200 Db (Tamb -20°C to 60°C)

## Additional Specific Condition of Use

In accordance with clause 5.1 of IEC 60079-1, the critical dimensions of the flamepaths are:

| Flamepath | Maximum Gap (mm) | Minimum L (mm) |
|---|---|---|
| Rear cover/main enclosure | 0.2 | 22.0 |
| Bushing/shaft | Interference fit | 8.0 |
| Main enclosure/bushing | 0.2 | 12.5 |

## Full certificate change history

**Issue 0 dated 2006-02-03**
**Issue 1 dated 2007-02-14**
1 To permit the marking label to be modified to include information that refers to the ATEX certification that is also associated with these products.

**Issue 2** – this Issue introduced the following change:
1 Minor drawing modifications to align with later versions of another approval.

**Issue 3** – this Issue introduced the following changes:
1 Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2004 Ed 4.0 and IEC 60079-1:2003 Ed 5.0 were replaced by IEC 60079-0:2011 Ed 6.0 and IEC 60079-1:2014 Ed 7.0. The following standard was added to the list IEC 60079-31:2013 Ed 2.0, the markings were updated accordingly and the Specific Conditions of Use were amended to recognise the new standards.
2 The introduction of dust explosive atmospheres into the scope of the certification, which introduces Ex tb IIIC T# Db coding within the marking.

FPA16
Ex db IIB T5 Gb (Tamb -20°C to 40°C)

FPA30
Ex db IIB T5 Gb (Tamb -20°C to 40°C)

FPA45
Ex db IIB T3 Gb (Tamb -20°C to 60°C)

**Date:** **08 January 2018**



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