



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 CSA 10.0007U Issue No: 0 Certificate history:
Issue No. 0 (2010-11-11)

Status: **Current** Page 1 of 5

Date of Issue: **2010-11-11**

Applicant: **Killark Division of Hubbell, Inc. (Delaware)**
3940 Martin Luther King Drive
St. Louis, Missouri 63113
United States of America

Equipment: **Breather-Drain and Flame Arrestor**
Optional accessory:

Type of Protection: **Ex d IIC(not acetylene); Ex d IIB**

Marking: IECEX CSA 10.0007 U
Ex d IIC(not acetylene) Gb [Serie KB1 &Series KB1FA]
Ex d IIB Gb [Series KDB]
Manufacturer Name or Trade Mark
Model Number or Type Designation
-50 °C ? Ta ? +60 °C
IP66, IP65 or IP44 (where applicable)

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

D R Stubbings

Position:

Technical Manager

*Signature:
(for printed version)*

Date:

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:

CSA International
178 Rexdale Boulevard
Toronto, Ontario M9W 1R3
Canada
and
1707 - 94th Street
Edmonton, AB T6N 1E6
Canada





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Manufacturer: **Killark Division of Hubbell, Inc. (Delaware)**
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United States of America

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 : 2004 Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
Edition: 4.0
IEC 60079-1 : 2003 Electrical apparatus for explosive gas atmospheres - Part 1: Flameproof enclosure 'd'
Edition: 5

*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:

[CA/CSA/ExTR10.0007/00](#)

Quality Assessment Report:

[US/UL/QAR07.0004/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The flame arrestor consists of a metallic body externally threaded on both ends for threading into an enclosure, and internally threaded on one end. A sintered element is permanently captured in the non-threaded internal opening of the main body by a press fit and mechanical tabs. A retaining nut is screwed over the shorter threaded portion of the body. The retaining nut is permanently attached to the body with a set screw which is cemented in place.

The flame arrestor is provided in four different thread configurations:

| Type designation | Type of Male Thread | Type of Female Thread |
|------------------|---------------------|-----------------------|
| KB1FA25 | 1/2 " NPT | 1/4 " NPT |
| KB1FAM16 | 1/2 " NPT | M16 |
| KBM20FA25 | M20 | 1/4 " NPT |
| KBM20FAM16 | M20 | M16 |

See additional pages for Breather drain and Design Options.

CONDITIONS OF CERTIFICATION: NO



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EQUIPMENT (continued):

The Breather-Drain Series KB1B, KB1D, KBM & KDB when installed in the top of an enclosure act as breather since it stabilizes the atmospheric pressure inside the enclosure. When installed in the bottom of an enclosure it acts as a drain since it allows the discharge of accumulated water due to internal condensation.

The Breather-Drain consists of a metallic body, externally threaded on one end for threading into an enclosure, and internally threaded on one end. A sintered bronze element is permanently captured in the non-threaded internal opening of the main body by a press fit and mechanical tabs. The KB1B, KB1D & KBM Series are provided with a metallic cap which has a 0.185 in. diameter hole through the center. The cap is secured to the body by a drive screw.

The Breather-Drain is provided with the thread configurations shown in the table below:

| Type designation | Type of Male Thread |
|------------------|---------------------|
| KB1BCEN | 1/2 " NPT |
| KB1DCEN | 1/2 " NPT |
| KBM20BCEN | M20 |
| KBM20DCEN | M20 |
| KDB-250CEN | 1/4" NPT |
| KDB-375CEN | 3/8" NPT |
| KDB-1CEN | 1/2" NPT |
| KDB-M16CEN | M16 |
| KDB-M20CEN | M20 |



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Additional information:

Design Options:

Alternative entry component thread forms:

Metric ISO 965-1, ISO965-3 medium fit (6g) for external threads. . .

ET(Conduit) BS 31:1940 (1979), Table A

PG DIN 40430:1971.

BSPP BS 2779:1973 class A full form for external threads.

BSPT BS 21:1985 standard threads only as clause 5.4, gauging to clause 5.2, system A

ISO 7/1:1982, gauging to ISO 7/2 clause 6.3 for external threads.

NPT ANSI/ASME B1.20.1-1983 gauging to clause 8.1 for external threads.

NPSM ANSI/ASME B1.20.1-1983 gauging to clause 9 for external threads.

Conditions of Installation:

Limiting Reference Pressure :

725 psig [Series KB1 and KB1FA]; 362.5 psig [Series KDB]

Surface Temperature rise (IEC 60079-1 clause 15.4.2) @ 60 ° C

Series KDB: $104^{\circ}\text{C} + 60^{\circ}\text{C} = 164.8^{\circ}\text{C}$

Series KB1: $138.3^{\circ}\text{C} + 60^{\circ}\text{C} = 198.3^{\circ}\text{C}$

Series KB1F: $68^{\circ}\text{C} + 60^{\circ}\text{C} = 128^{\circ}\text{C}$

Surface Temperature rise (IEC 60079-1 clause 15.4.2) @ 60 ° C

Series KDB: $104^{\circ}\text{C} \times 1.2 + 60^{\circ}\text{C} = 184.8^{\circ}\text{C}$

Series KB1D: $138.3^{\circ}\text{C} \times 1.2 + 60^{\circ}\text{C} = 225.96^{\circ}\text{C}$

Series KB1F: $68^{\circ}\text{C} \times 1.2 + 60^{\circ}\text{C} = 141.6^{\circ}\text{C}$

Maximum Permitted Enclosure Volume : 160 L