



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx ITS 16.0014X	Page 1 of 5	<u>Certificate history:</u> Issue 1 (2019-11-08) Issue 0 (2017-03-27)
Status:	Current	Issue No: 2	
Date of Issue:	2022-07-20		
Applicant:	Eaton Electrical Systems Ltd Trading as Redapt or Raxton Kingsway South Westgate Aldridge West Midlands WS9 8FS United Kingdom		
Equipment:	Ex eb/ tb DP-E/DP-E4 and CV/CV-M Breather Drains and BD-U Ex db		
Optional accessory:			
Type of Protection:	Ex eb/ tb Breather Drains. Type BD-U are also Ex db.		
Marking:	IECEx ITS 16.0014X		
	Model: BD-U	Model: DP-E & CV	Model: DP-E4 + DP-E5 & CVM + CVB
	Ex eb I Mb, II 2G Ex eb IIC Gb	Ex eb I Mb	Ex eb IIC Gb
	Ex db I Mb, II 2G Ex db IIB+H2/IIC Gb	Ex eb IIC Gb	Ex tb IIC Db IP66
	Ex tb IIC Db IP66	Ex tb IIC Db IP66	

Approved for issue on behalf of the IECEx
Certification Body:

Mark Newman

Position:

Certificate Officer

Signature:
(for printed version)

Date:
(for printed version)

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2. This certificate is not transferable and remains the property of the issuing body.
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Intertek Testing & Certification Limited
ITS House, Cleeve Road
Leatherhead
Surrey, KT22 7SA
United Kingdom

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Manufacturer: **Eaton Electrical Systems Ltd Trading as Redapt or Raxton**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
United Kingdom

Manufacturing locations: **Eaton Electrical Systems Ltd Trading as Redapt or Raxton**
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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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-1:2014](#) Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

[IEC 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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

[GB/ITS/ExTR16.0016/00](#)

[GB/ITS/ExTR16.0016/01](#)

[GB/ITS/ExTR16.0016/02](#)

Quality Assessment Report:

[GB/SIR/QAR06.0014/10](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The **Ex eb / Ex tb IP66 DP-E/DP-E4 Breather/Drains** are designed to allow moisture emission from Increased Safety Type 'Ex e' enclosures. Each device has an M20, M25, M32, ½", ¾" or 1"NPT entry thread. The body is machined such that a dust/moisture seal, manufactured from Hydrophilic Polyethylene or sintered bronze, can be pressed in place. Drainage channels through the body allow for the passage of moisture through the filter. The device may be screwed into the wall of an enclosure or into a through hole, being secured by a locknut. NPT DPE breather Drains may be manufactured without holes in the thread.

The **Ex db/ Ex eb / Ex tb BD-U Breather/Drains** are designed to allow moisture emission from either Flameproof Type 'Ex db' enclosures, Increased Safety Type 'Ex eb' or "Ex tb" enclosures. Each device has either a M20, M25, 1/2" NPT or 3/4" NPT entry thread. The body is machined such that a dust/moisture seal, manufactured from sintered copper/bronze alloy, which can be optionally nickel plated, can be pressed in place. The device is designed to be screwed into the wall of an enclosure. For Ex eb & tb applications only, holes may be drilled in the thread. A weather cap to get an IP66 rating is provided.

The **Ex eb / Ex tb CV / CV-M Breather Drain Plugs** each comprise a hollow brass body that is threaded at one end to enable it to be fitted to the bottom of the associated 'Ex eb' enclosure. The body contains a press-fitted sintered disc that allows moisture to pass out of the enclosure via two drain holes. These holes exit into the hexagonal socket which shrouds the drain holes and also provides a means of tightening the device. The CV plugs are available with entry thread sizes between M16 and M32. Design Options: An alternative body profile with three drain holes, in sizes M25 and M32 only. NPT breather Drains may be manufactured without holes in the thread.

Surface coating:

The products may additionally be metallic plated to suit the application.

Plating Options: Nickel, Zinc, Electroless, Chromatise, Anodized. Maximum thickness 0.008mm

Alternative materials of manufacture:

Groups I and II – Brass, lead free brass, mild steel or stainless steel

Group II only - Glass filled nylon or Aluminium

O' ring seals:

'O' ring seals materials fitted into the Breather/Drain may be provided in Nitrile, Viton, EPDM, Neoprene, Silicone or Fluorosilicone to suit the application

Threads:

NPT, NPS BSPP, BSPT, Imperial Conduit, ET or Pg

Metric to ISO 965 parts 1 & 3

PG to DIN 40430:1971

BSPP to BS2279:1985

ET to BS 31:1979

NPT/ NPS to ANSI/ ASME B1.20.1-1983

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex



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Equipment (continued):

Alternative equivalent entry threads:

NPT, NPS BSPP, BSPT, Imperial Conduit, ET or Pg

Any other thread form conforming to Table 3 of IEC 60079-1 and clauses C2.2 & C2.3.1 as applicable (Ex d)

The manufacturer shall provide with each device a declaration stating the following: Confirmation of the material, maximum bubble test pre size and minimum density, Special mounting instructions

Conditions of manufacture:

These products shall be marked in accordance with the information as specified in this certificate and related reports

The manufacturer shall provide with each BD-U device a declaration stating the following: Confirmation of the material, maximum bubble test pre size and minimum density, Special mounting instructions



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:

- Nylon material references revised.
- Drawings CV-M and DP-E revised to Issue 2.

Issue 2:

- Update as per latest standard IEC 60079-0 Ed 7.
- Correct some typographical mistakes.
- Special conditions modified with respect to bottom application and wall thickness restriction.
- IP & Temperature range to be clarified.
- BD-U re-classified as IIC as material composition of the sinters within limits.
- BD-U & Weather Cap statement added - for Ex e applications only, holes can be drilled in the thread. Note that this product is Ex d/ Ex e approved.
- Change of Brass material of construction to lead free type.

Annex:

[SFT-IECEx-OP-19f - Annex for IECEx Certificate of Conformity - Final Clean \(3\)_1.pdf](#)



Annex to IECEx Certificate of Conformity

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Annex No. 1		

Technical Documents			
Title:	Drawing No.:	Rev. Level:	Date:
*Technical Specification DP-E/DP-E4, CV/CV-M, BD-U	SPEC-BREA	Rev-I-0	28/02/2022
*Ex d FLAMEPROOF BREATHER DRAIN	BDU-BREA	Rev-I-0	07/03/2022
Ex d BREATHER SINTER	99-D-12	1	07/10/2008
*INCREASED SAFETY BREATHER DRAIN	DPE-BREA	Rev-I-0	07/03/2022
*INCREASED SAFETY BREATHER DRAIN	CV-BREA	Rev-I-0	07/03/2022
*Marking Specification DP-E/DP-E4, CV/CV-M, BD-U	MARK-BREA	Rev-I-0	07/03/2022
Ex e BREATHER SINTER	Ex e Sinters	4	25/08/2016
*Ex accessories Regulatory Instruction	CAP18267	2022-03	As stamped

Note: An * is included before the title of documents that are new or revised.

Specific Conditions of Use:

1. The products shall be selected for a temperature range at their points of mounting based upon the combination of interface seal and material of construction:

Product	Temperature
DP-E Metal with HDP-E sinter	-50°C +85°C
DP-E Metal with Bronze sinter	-60°C to +200°C
DP-E4 GFN with HDP-E sinter	-30°C to +85°C
DP-E4 GFN with Bronze sinter	-30°C to +90°C
BD-U with bronze sinter	-60°C to +150°C (limited due to Ex d application)
CV Metal with Bronze sinter	-60°C to +200°C
CV-M GFN with Bronze sinter	-20°C to +65°C

Interface O-ring Material	Maximum Service Temperature
None fitted	-60°C to +200°C
Nitrile	-30°C to +80°C
EPDM	-50°C to +100°C
Neoprene	-40°C to +80°C
Viton	-20°C to +180°C
Silicone	-60°C to +180°C

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Fluorosilicone -60°C to +130°C

Note: Unless fitted with an interface sealing O-ring with lower properties, temperatures shall then be limited as per the manufacturer's instructions.

2. These breather/drains are only suitable for bottom entry applications when used to drain. They can be used in other orientation if for breathing only.

Type BD-U:

3. For flameproof applications the BD-U type may be used in other orientations however further assessment of the suitability of neighbouring limiting service temperatures shall be considered.

4. . For flameproof applications These devices shall not be used with enclosures with a volume greater than 190ltrs

5. The max temperature in determining the temperature class is equal to the max. temp of associated enclosure + 26.8 K based on H₂ measurement up to and including the reference pressure volume of 190 litres. For use in Acetylene atmospheres further testing is required to confirm this value. This value is to be taken into account when determining the Temperature Class of the equipment to which it is fitted.

6. For flameproof application, the reference explosion pressure of the associated enclosure is limited to 40 bar

Type CV/CV-M:

7. When used for increased safety (Exe) applications a suitable method of sealing to the associated enclosure shall be fitted

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