

# EU TYPE-EXAMINATION CERTIFICATE

1. EU type-examination Certificate (Module B)

2. Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)



3. EU type examination certificate Nr **ITS16ATEX101338X R.2**

4. **Product:** DP-E/DP-E4 and CV/CV-M Ex eb / Ex tb and BD-U Ex db / Ex eb / Ex tb  
Breather Drains

5. **Manufacturer:** Eaton Electrical Systems Trading as Redapt, Raxton or Capri **Applicant:** Eaton Electrical Systems Trading as Redapt, Raxton or Capri

6. **Address:** Kingsway South Westgate Aldridge West Midlands WS9 8FS **Address:** Kingsway South Westgate Aldridge West Midlands WS9 8FS

7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.

8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. G102174344D dated November 2016, 104039337LHD-001c dated 3<sup>rd</sup> September 2019 and 104757223LHD-001 dated 11<sup>th</sup> July 2022.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018, EN 60079-1:2014, EN IEC 60079-7:2015+A1:2018 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.

10. If the sign X is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

11. This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12. The marking of the product shall include the following:



**Model: BD-U**

I M2 Ex eb I Mb, II 2G Ex eb IIC Gb  
I M2 Ex db I Mb, II 2G Ex db IIB+H2/IIC Gb  
II 2D Ex tb IIIC Db IP66

**Model: DP-E & CV**

I M2 Ex eb I Mb  
II 2G Ex eb IIC Gb  
II 2D Ex tb IIIC Db IP66

**Model: DP-E4 + DP-E5 & CVM + CVB**

II 2G Ex eb IIC Gb  
II 2D Ex tb IIIC Db IP66

**I M2 not for DP-E4 + DP-E5 & CVM + CVB**

**Certificate issue date**

20<sup>th</sup> July 2022

**Mark Newman**

Certification Officer  
Intertek Italia S.p.A. (NB 2575)



PDR N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

**Intertek Italia S.p.A.** Via Miglioli, 2/A - 20063 Cernusco sul Naviglio, Milano - Italy



## SCHEDULE

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### 13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

**The Ex eb / Ex tb DP-E/DP-E4 Breather/Drains** are designed to allow moisture emission from Increased Safety Type 'Ex eb or tb' 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 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



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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

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

#### 14. DRAWINGS AND DOCUMENTS

TITLE	DOCUMENT Nr	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.

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.

#### 15. 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 ranges
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



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CV-M GFN with Bronze sinter	-20°C to +65°C
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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
Flurosilicone	-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. These devices shall not be used with enclosures with a volume greater than 190ltrs.
5. For flameproof applications the max temperature in determining the temperature class is equal to the max. temp of associated enclosure + 26.8 K based on H<sub>2</sub> 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 applications, the reference pressure is limited to 4000kPa (40 Bar) maximum.

### Type CV/CV-M:

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

## 16. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 104757223LHD-001 dated 11<sup>th</sup> July 2022.

## 17. ROUTINE (FACTORY) TESTS

None



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### 18. DETAIL OF CERTIFICATE CHANGES

#### R.0 (14<sup>th</sup> November 2018):

- Original Issue by NB2575.

#### R.1 (17<sup>th</sup> April 2020):

- Nylon material references revised. Drawing AB-AJ-BB-BJ revised to Issue 2.

#### R.2 (20<sup>th</sup> July 2022):

- Update as per latest standard EN IEC 60079-0:2018.
- Correct some typographical mistakes.
- Special conditions modified with respect to bottom application and wall thickness restriction.
- IP & Temperature range clarification
- BD-U re-classified as IIC when material composition of the sinters within limits of the Annex B EN 60079-1.
- BD-U & Weather Cap statement added - for Ex e applications only, holes can be drilled in the thread. Note that this product is Ex db/ Ex eb / Ex tb approved.
- Lead Free Brass added.