



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 6 [Certificate history:](#)
Issue 0 (2017-03-27)

Status: **Current** Issue No: 1

Date of Issue: 2019-11-08

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

Equipment: **Type DP-E, CV and BD-U Breather Drains. Type BD-U are also Ex d.**

Optional accessory:

Type of Protection: **Ex e/ tb Breather Drains. Type BD-U are also Ex d.**

Marking: IECEx ITS 16.0014X
See Annex for Marking detail

Approved for issue on behalf of the IECEx
Certification Body:

V K Varma

Position:

Certification Officer

Signature:
(for printed version)

Date:

2019-11-08

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 www.iecex.com or use of this QR Code.



Certificate issued by:

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

Additional
manufacturing
locations:

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 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-1:2014-06 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 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

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](#)

Quality Assessment Reports:

[GB/SIR/QAR06.0014/07](#)

[GB/SIR/QAR06.0014/08](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The Ex eb /tb DP-E Breather/Drains are designed to allow moisture emission from Increased Safety Type 'Ex eb' enclosures. Each device has an M20, M25, M32, 1/2", 3/4" 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 clearance hole, being secured by a locknut.

The Ex d/ Ex tb BD-U Breather/Drains are designed to allow moisture emission from either Flameproof Type 'Ex d' enclosures or Increased Safety Type 'Ex e' 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.

The Ex eb / Ex tb CV 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 e' 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.

Alternative materials of manufacture:

Groups I and II – Brass, mild steel, or stainless steel

Group II only - Glass filled nylon or Aluminum

Alternative thread forms in equivalent sizes:

Metric to ISO 965 parts 1 & 3

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

PG to DIN 40430:1971

BSPP to BS2279:1985

ET to BS 31:1979

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

Surface coating:

Plating Options: Nickel, Zinc, Chromatise, Electroless Nickel, Anodised

Nickel maximum thickness 0.008 mm

Conditions of manufacture:

1. These products shall be marked in accordance with the information as specified in this certificate and related reports
2. 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

SPECIFIC CONDITIONS OF USE: YES as shown below:

General:



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1 These breather/ drains are only suitable for bottom entry applications. In flameproof applications the BD-U types may be used in other orientations, however further assessment of the suitability of neighbouring limiting service temperatures shall be considered. Consult manufacturer for further guidance.

2 The breather/ drains with 3mm drain holes shall only be used with increased safety enclosures that have a minimum wall thickness of 2mm, there is no restriction on the wall thickness for the breather/ drain with 5mm drain holes.

Note: NPT Breather Drains may be manufactured without holes in the thread as shown in the drawings

3 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:

Construction material	Maximum Service Temperature
Metallic body	Dependant on filter and seal material
30% Glass Filled Nylon body (DP-E4)	-30°C to +90°C (unless limited by filter or o-ring material)
30% Glass Filled Nylon body (CV-M)	-20°C to +65°C
HDPE dust/ moisture seal	-50°C to +85°C
Metallic dust/ moisture seal	Dependant on body and interface material

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 *
Fluorosilicone	-60°C to +130°C

Note: The limiting temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of EN 60079-0:2012+A11:2013

Note: The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining) O-ring materials affect marked with '*' above

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

4 The interface between the breather/ drain and the associated enclosure cannot be defined. Therefore, it is the user's responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces

5 The clearance holes for metric male threaded products, suitable for clearance hole applications of increased safety enclosures

T/ **Type DP-E4:**



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1 The Ex eb DP-E4 Breather Drain is only considered to provide the minimum level of ingress protection IP64 when used in a bottom entry application

Type BD-U:

1. These devices shall not be used with enclosures with a volume greater than 190litrs
2. For flameproof applications a temperature rise of 26.8K was measured on the surface of the element up to and including the reference pressure volume of 190 litres. This value is to be taken into account when determining the Temperature Class of the equipment to which it is fitted
3. The breather drains do not dissipate any energy other than the expulsion of heated gas in the event of an internal explosion (see above). For Ex eb applications the temperature class will be dependent on the enclosure into which it is installed.
4. The reference pressure is limited to 4000kPa (40 Bar) maximum

Type CV

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

2 The limiting temperature ranges of these devices depends upon their material of manufacture and the type of 'o' ring used in their construction as defined by the manufacturer. See table above.



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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 2CV-M

Annex:

[ITS16ATEX101338X-IECExITS16.0014X.pdf](#)

THE FOLLOWING INFORMATION WILL BE MARKED ON THE PRODUCT: -

1. EATON, RAXTON, REDAPT
2. THE PRODUCT SERIES No. CODE. BD-U, DP-E, CV
3. DESIGNATED MALE THREAD
4. CERTIFICATE NUMBER & BODY. I.E IECEX ITS 16.0014X & ITS 16ATEX10338X
5. CLASSIFICATION MARKING. BD-U Ex e I/IIC MbGb

Ex d I/IIB+H2 MbGb
Ex tb IIIC Db IP66

OR


5. CLASSIFICATION MARKING. DP-E & CV Ex e I/IIC MbGb


Ex tb IIIC Db IP66

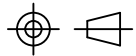
OR

5. CLASSIFICATION MARKING. DP-E4 + DP-E5 & CVM + CVB Ex e IIC Gb

Ex tb IIIC Db IP66

6.ADDITIONAL ATEX MARKING:  I M2 NOT FOR DP-E4 + DP-E5 & CVM + CVB

 II 2GD

			SERIES No. —	MATERIAL —	SCALE DO NOT SCALE	TITLE MARKING DRAWING				
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