



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 ITS 16.0014X Issue No: 0 Certificate history:
Status: **Current** Page 1 of 4 Issue No. 0 (2017-03-27)

Date of Issue: **2017-03-27**

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

Equipment: **Type CV and DP-E Ex e/ tb 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:

Vijay K. Varma
2017-03-27

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:

Intertek Testing & Certification Limited
ITS House, Cleeve Road,
Leatherhead,
Surrey, KT22 7SB
United Kingdom



IECEx Certificate of Conformity

Certificate No: IECEx ITS 16.0014X Issue No: 0

Date of Issue: 2017-03-27 Page 2 of 4

Manufacturer: **Eaton Electrical Systems Ltd Trading as Redapt or Raxton**
Kingsway South
Westgate
Aldridge
West Midlands
WS9 8FS
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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*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/ITS/ExTR16.0016/00](#)

Quality Assessment Report:

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



IECEx Certificate of Conformity

Certificate No: IECEx ITS 16.0014X

Issue No: 0

Date of Issue: 2017-03-27

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Ex e /tb DP-E Breather/Drains are designed to allow moisture emission from Increased Safety Type 'Ex e' enclosures. Each device has either an M20, M25 or M32 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.

The 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 e / Extb 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.

'O' ring seals materials fitted into the Breather/Drain are provided in nitrile, Viton, EPDM, neoprene, silicone or fluorsilicone materials to suit the application

Alternative materials of manufacture:

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

Group II only - Glass filled nylon (Durathon glass filled nylon BKV30 / MDF2 900) or aluminium

Alternative equivalent entry threads:

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

O' ring seals:

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

Surface coating:

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

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:

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 three, 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 two, 5mm drain holes.



IECEX Certificate of Conformity

Certificate No: IECEX ITS 16.0014X

Issue No: 0

Date of Issue: 2017-03-27

Page 4 of 4

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
Nylon body	-50°C to +125°C, unless limited by filter material
HDPE dust/ moisture seal	-50°C to +125°C
Metallic dust/ moisture seal	Dependant on body and interface material
Interface O-ring Material	Limiting Temperature
Nitrile	-20°C to +100°C
EPDM	-20°C to +125°C
Neoprene	-40°C to +100°C
Viton	-20°C to +100°C
Silicone	-50°C to +180°C
Fluorosilicone	-70°C to +150°C

N.B. The service temperatures specified above are de-rated by 20K according to Clause 7.2.2 'Material Selection' of IEC 60079-0

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

Type DP-E-4:

1. The Ex e DP-E-4 Breather Drain is only considered to provide the minimum level of protection IP54 when used in a bottom entry application

Type BD-U:

1. These devices shall not be used with enclosures with a volume greater than 190ltrs

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 e 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 e) 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.

Annex

ITS16ATEX101338X-IECEXITS16.0014X.pdf

DRG No.	IECEX ITS16.0014X ITS16ATEX101338X	ISSUE	1	DO NOT SCALE	IF IN DOUBT ASK
---------	---------------------------------------	-------	---	--------------	-----------------

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: Ex I M2 NOT FOR DP-E4 + DP-E5 & CVM + CVB
 Ex II 2GD

			SERIES No. ---	MATERIAL ---	SCALE DO NOT SCALE	TITLE MARKING DRAWING		Thread Conversion Specialists EATON ELECTRICAL SYSTEMS LTD UNIT 11 KINGSWAY SOUTH ALDRIDGE WALSALL WEST MIDLANDS WS9 8PS TEL +44 (0) 1922 405040		
			THIS DRAWING IS THE PROPERTY OF EATON AND MUST NOT BE COMMUNICATED, COPIED OR LOANED TO ANY OTHER THIRD PARTY WITHOUT PERMISSION.	FINISH ---	ALL DIMENSIONS ARE IN MILLIMETRES UNLESS SHOWN OTHERWISE	 THIRD ANGLE PROJECTION	DRAWN BY ASG	APPROVED	DATE	DRG No. IECEX ITS16.0014X ITS16ATEX101338X
ISSUE	DATE	REVISION		CERTIFICATE No. ---	TOLERANCES GEN ANG					ISSUE 1