



# 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](http://www.iecex.com)

Certificate No.: IECEX ITS 16.0012X

Issue No: 1

Certificate history:

Issue No. 1 (2018-04-27)

Issue No. 0 (2016-12-20)

Status: **Current**

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Date of Issue: **2018-04-27**

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

Equipment: **Types CB, CF, CK, CQ, CY, PD-U, PH-E, PA-D, PB-D and PD-E-4 Stopping plugs**

*Optional accessory:*

Type of Protection: **Ex db , eb, tb**

Marking:

IECEX ITS 16.0012X

Ex db I/IIC Mb/Gb

Ex eb I/IIC Mb/Gb

Ex tb III C Db IP66

(Group I marking does not apply to CY or PD-E-4 Stopping Plugs ) (Ex d marking does not apply to PD-E-4) Ta from -70°C to 200°C (Dependant on construction material and O-ring fitted). See special conditions for particular model.

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

V K Varma

*Position:*

Certification Officer

*Signature:  
(for printed version)*

*Date:*

2018-04-27

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 7SA  
United Kingdom



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Manufacturer: **Eaton Electrical Systems trading as Raxton or Redapt**  
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 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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2014-06</b> Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-31 : 2013</b> Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
<b>IEC 60079-7 : 2015</b> 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/ExTR16.0014/00](#)      [GB/ITS/ExTR16.0014/01](#)

Quality Assessment Report:

[GB/SIR/QAR07.0016/06](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The stopping plugs are threaded and are used to fill unused entries in associated apparatus. They have thread forms between M16 and M 110 and are briefly described as follows:

Type CF: Round/hexagon socket/internal mounting

Type CB: Round/hexagon socket/external mounting

Type CK: Hexagon head

Type CQ: 'Mushroom' head

Type CY: Similar to Type CK with a hollow threaded section

The PD-U series stopping plugs comprise of metallic round bodies with a dome head having a hexagonal key-way recess for tightening. They may optionally be machined with a groove to fit an 'o' ring seal. Coded: Exd I/IIC Mb/Gb, Ex e I/IIC Mb/Gb, Ex tb III C Db IP6X

The PA-D and PB-D Series stopping plugs comprise of metallic round bodies with a thread run out to shoulder having a hexagonal key-way recess for internal or external tightening. Coded: Ex d I/IIC Mb/Gb, Ex e I/IIC Mb/ Gb Ex tb III C Db IP6X

The PH-E Series are ranges of 'Ex e' threaded stopping plugs each comprising a threaded body with either a hexagonal head or socket for tightening.

PD-E-4 Stopping Plugs: these are a range of threaded stopping plugs that are used to fill unused entries in the associated apparatus. The PD-E-4 has a 'mushroom' head, there is also a version made from Durethan BKV 30 N1 30% Glass Filled Nylon 6 which are intended for Ex e only.

Material options

- Brass BS 2872 (CZ1 21)
- Mild Steel to BS970 (EN1A)
- Stainless Steel to BS970 (316)
- Aluminium BS1474, 6082T6
- Type Durethan BKV 30 N1 Glass Filled Nylon 6
- Type Durethan BKV 140 Glass Filled Nylon 6

Surface Coating: Nickel, Zinc, Electroless Nickel

Entry threads options:

- Metric to BS 3643:
- ET Conduit to BS 31:
- PG to DIN 40430:
- BSP to BS 2779



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•BSPT to BS 21

•NPT to ANSI/ASME B1.20.1

## SPECIFIC CONDITIONS OF USE: YES as shown below:

1. If a stopping plug is machined with an undercut and is used for an Ex d application, then the wall of the enclosure into which it is fitted shall be such as to maintain five full threads of engagement.
2. When used for increased safety or Ex e or protection by enclosure Ex tb applications, a suitable method of sealing to the associated enclosure shall be fitted
3. The stopping plugs shall not be used with any form of adaptors or reducers.
4. The interfaces between these devices 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 stopping plugs, when manufactured from non-metallic material, are only suitable for installation in areas considered to be a low risk from mechanical impact
6. The stopping plugs, when manufactured from non-metallic material, shall be adequately protected from direct exposure to sunlight
7. The stopping plugs, when construction from non-metallic material, shall only be cleaned with a damp cloth.
8. At their point of mounting, these devices are suitable for use at the following temperatures dependent on the type of 'o'-ring:

O-ring Service temperature

None fitted -50°C to 180°C \*

EPDM -30°C to +125°C

Nitrile -20°C to +80°C

Neoprene -20°C to +100°C

Viton -5°C to +180°C \*

Silicone -30°C to +180°C \*

Fluorosilicone -50°C to +150°C

Note: The maximum temperature is limited to 150°C in Group I application (Coal dust, Mining)

### PD-E-4 Nylon Stopping Plugs

9. When manufactured in BKV 30 NI type material, the entry devices are suitable for a service temperature range of -20°C to +65°C. items made from this material are marked with 'BKV 30'
10. When manufactured in BKV 140 type material, the entry devices are suitable for a service temperature range of -20°C to +45°C; items made from this material are marked with 'BKV 140'.

11. At their point of mounting, these devices are suitable for use at either -20°C to +65°C or 5°C to +40°C when using Viton seals. The clearance holes for metric male threaded products, suitable for clearance hole applications of increased safety enclosures are to have a diameter of 0.3 to 0.5mm larger than the major diameter of the make thread. PD-E-4 stopping plugs employing parallel threads without seals shall have at least eight full threads of engagement, with a minimum tolerance according to ISO 965-1 and ISO 965-3.

### PD-U Stopping Plugs



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12. When installed in Group I applications, adaptors manufactured in brass shall be installed where the risk of impact is low

**PA-D and PB-D Stopping Plugs**

13. At their point of mounting, these devices are suitable for use at -50°C to +180°C for Group II applications and -50°C to +150°C for Group I applications



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## **EQUIPMENT (continued):**

Design options

\* The materials of construction may be brass, stainless steel or mild steel.

\* Entry threads may be Metric to ISO 965, Pg to DIN 40430, BSPP to BS 31, ET (British Conduit) to ET 31, NPS to ANSI/ASME B1.20.1 or thread forms complying with Table 3 of IEC 60079-1.

Material options O-ring and options Entry thread options

Brass CZ121/CZ122 EPDM (standard) Metric to ISO PT 173

Stainless steel 316 Nitrile PG to DIN 40430:1971

Aluminium BS 1474, 6082T6 Neoprene BSPP to BS 2779

Aluminium bronze BS 1400B2 (JM-03 or LM7-16) Viton BSPT to BS21

Silicone ET Conduit to BS 31

## **Conditions of manufacture**

The Manufacturer shall comply with the following for the stopping plugs:

1. The DP-E stopping plugs manufactured from Nylon shall not be marked with any information that indicates that they are suitable for Group I use.
2. The manufacturer shall take all reasonable steps to ensure that the user can comply with the special conditions for safe use and shall advise the user in respect of the materials that are used in the construction of the devices.
3. These products shall be marked in accordance with the information as specified in this certificate and related reports.
4. 1. When these entry devices are manufactured in Type BKV 140 material, they shall be to be marked with BKV 140.
5. These products shall be marked in accordance with the information as specified in this certificate and related reports.
6. Aluminium variants, where applicable, are not permitted for Group I applications. The manufacturer shall ensure that the equipment is marked appropriately
7. In accordance with IEC 60079-1, the coating on joint surfaces of metallic devices that are electroplated shall be no more than 0.008mm thick.



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):**

Issue 1: PA-U, PB-U as stated to be changed to PA-D, PB-D stopping plugs and addition of M12 & equivalent threadforms Intertek Project G103326724