EU-Type Examination Certificate

1. **EU-TYPE EXAMINATION CERTIFICATE**

2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**

3. **EU-Type Examination Certificate Number: ITS16ATEX101335X Issue 1**

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

5. **Manufacturer:** **Eaton Electrical Systems Ltd Trading as Raxton or Redapt**

6. **Address:** Kingsway South
Westgate
Aldridge
West Midlands
W59 8FS

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

8. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

   The examination and test results are recorded in confidential Intertek Report Ref G102174344A Issue 1 dated December 2016 and G103326724 Issue 1 dated April 2018

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2012, EN 60079-1:2014, EN 60079-7:2015 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 Safe 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:

II 2 GD / I M2	Ex d I/IIC Mb/Gb Ex e I/IIC Mb/Gb Ex tb IIIC 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 = (Dependant on construction material and O-ring fitted – See equipment sections) Ta =-20°C, or 5°C to 65°C (from Nylon PD-E-4 versions, refer to Conditions of Certification 6) See equipment section

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V K Varma
Certification Officer
27th April 2018

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13. Description of Equipment or Protective System

The stopping plugs are threaded and are used to fill unused entries in associated apparatus. They have thread forms between M12 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 IIIC 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 IIIC 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.

Design Options:

Threadforms Options: ISO Metric (to BS3463)

PG to DIN40430

NPT (ANSI/ASME B1.20.1)

NPS (ANSI/ASME B1.20.1)

ISO Pipe Thread (BS21) BSPP/BSPT

Imperial conduit ET BS31

BSP to BS21

Any threadform conforming to Table 3 of EN 60079-1

Material Options: Brass BS 2874 (CZ121)

Mild Steel to BS970 (EN1A)

Stainless Steel to BS970 (316)

Aluminium HE30 (BS754 Parts 1,2,3 & 6/BS755 1,2,3 & 6)

Plating Options: Metallic variants may be suitably plated to the appropriate British, European or ISO recognised standards

Types 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 (CZI 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:

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- Metric to BS 3643:
- ET Conduit to BS 31:
- PG to DIN 40430:
- BSP to BS 2779
- BSPT to BS 21
- NPT to ANSI/ASME B1.20.1

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. When these entry devices are manufactured in Type BKV 30 or 140 material, they shall be to be marked with BKV 30 or140 as applicable.
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.

14. Report Number

Intertek Report Ref: G102174344A Issue: 1 Dated: December 2016 and G103326724 Issue 1 dated April 2018

15. Special Conditions of Certification

(a). Specific Conditions of Safe Use

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 engagement.
2. When used for increased safety or Ex e or protection by enclosure Ex tb applications,

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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. The stopping plugs are suitable for use at -50°C to 200°C at their point of mounting (Note: this is reduced when the stopping plugs are fitted with 'O' rings, see below).

'O'-ring Material	Limiting temperature
None	-50°C to +200°C
Nitrile	-20°C to +80°C
EPDM	-30°C to +125°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 +65°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 dimeter of 0.3 to 0.5mm larger than the major diameter of the male 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

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

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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

(b). Conditions of Manufacture - Routine Tests

- None

16. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report Ref: G102174344A Issue: 1 Dated: December 2016

17. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Stopping Plugs (CB& CF Tapered	CB-CF	1	05/04/16
Stopping Plugs (CQ, CK & CY)	CQ-CK-CY	1	18/04/11
Exe Glass Filled Nylon Stopping Plugs	CQ-M	1	05/04/16
EExe II Dome Head Stopping Plugs	PD-E	1	28/03/16
Exd I&IIC & Exe IIC Domehead Stopping Plugs	PD-U	1	28/03/16
Exe II Hex Head Stopping Plugs	PH-E	1	04/04/16
Marking Drawing	IECExITS16.0012X, ITS16ATEX101335X	1	15/11/16
*Exd I & IIC Certified Parallel Stopping Plugs	80-B-6	1	08/03/16
*Exd I&IIc Certified NPT Stopping Plugs	PA-D PB-D	1	08/03/16

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

18. Details of Certificate Changes Issue 1

Issue 0: Original
Issue 1: PA-U, PB-U as stated to be changed to PA-D, PB-D stopping plugs to be aligned on latest SIRA certificate M12 & equivalent thread forms. Intertek Project G103326724