



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 99ATEX3173X** Issue: **11**

4 Equipment: **BPG Range of Junction Boxes**

5 Applicant: **ABTECH Limited**

6 Address: **Sanderson Street
Lower Don Valley
Sheffield S9 2UA
UK**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012 EN 60079-7:2007 EN 60079-11:2012 EN 60079-26:2007 EN 60079-31:2009

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2 GD

Ex e IIC T6 Gb (Ta = -65°C to +#°C)
Ex e IIC T5 Gb (Ta = -65°C to +#°C)
Ex e IIC T4 Gb (Ta = -65°C to +#°C)
Ex ib IIC T6 Gb (Ta = -65°C to +#°C)
Ex ib IIC T5 Gb (Ta = -65°C to +#°C)
Ex ib IIC T4 Gb (Ta = -65°C to +#°C)
Ex tb IIIC T85°C Db (Ta = -65°C to +#°C)
Ex tb IIIC T100°C Db (Ta = -65°C to +#°C)

or



II 1 GD

Ex ia IIC T6 Ga (Ta = -65°C to +#°C)
Ex ia IIC T5 Ga (Ta = -65°C to +#°C)
Ex ia IIC T4 Ga (Ta = -65°C to +#°C)
Ex ta IIIC T85°C Da (Ta = -65°C to +#°C)
Ex ta IIIC T100°C Da (Ta = -65°C to +#°C)

Project Number 70004712

C Ellaby
Deputy Certification Manager

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13 **DESCRIPTION OF EQUIPMENT**

The BPG range of junction boxes utilises a BPG enclosure covered by certificate number Sira 99ATEX3172U and are fitted with an arrangement of suitably certified terminals.

| BPG ref. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 13.5 | 14 | 15 |
|----------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|
| Length | 80 | 110 | 160 | 190 | 230 | 122 | 220 | 160 | 260 | 360 | 560 | 255 | 400 | 400 | 600 | 400 |
| Width | 75 | 75 | 75 | 75 | 75 | 120 | 120 | 160 | 160 | 160 | 160 | 250 | 250 | 250 | 250 | 405 |
| Height | 55 | 55 | 55 | 55 | 55 | 90 | 90 | 90 | 90 | 90 | 90 | 120 | 120 | 160 | 120 | 120 |

(All dimensions are in mm)

Before the Junction Box is installed, its total dissipated power for the particular application will be calculated in accordance with EN 60079-7:2003, Annex E, E.2 and will not exceed the values given in the tables below (Junction boxes of size not specified in the tables may be manufactured subject to the maximum dissipated power being based on a smaller enclosure):

| EPL Ga Gb Db | | | | | | |
|--------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|
| BPG ref. | Maximum Power Dissipation (W) | | | | | |
| | T6/T85°C Ta +40°C (max) | T6/T85°C Ta +55°C (max) | T6/T85°C Ta +60°C (max) | T6/T85°C Ta +65°C (max) | T5/T100°C Ta +55°C (max) | T4/T100°C Ta +90°C (max) |
| 1 | 8.390 | 2.23 | 1.73 | 1.45 | 8.390 | 8.390 |
| 2 | 8.551 | 2.00 | 1.70 | 1.45 | 8.551 | 8.551 |
| 3 | 8.833 | 2.00 | 1.70 | 1.45 | 8.833 | 8.833 |
| 4 | 9.012 | 2.07 | 1.80 | 1.29 | 9.012 | 9.012 |
| 5 | 9.260 | 2.00 | 1.70 | 1.10 | 9.260 | 9.260 |
| 6 | 9.378 | 2.00 | 1.70 | 1.45 | 9.378 | 9.378 |
| 7 | 10.500 | 2.30 | 1.70 | 1.10 | 10.500 | 10.500 |
| 8 | 10.348 | 2.00 | 1.70 | 1.10 | 10.348 | 10.348 |
| 9 | 11.933 | 2.30 | 1.70 | 1.10 | 11.933 | 11.933 |
| 10 | 13.793 | 4.50 | 3.29 | 2.10 | 13.793 | 13.793 |
| 11 | 18.338 | 6.68 | 5.20 | 4.00 | 18.338 | 18.338 |
| 12 | 15.474 | 2.30 | 1.70 | 1.10 | 15.474 | 15.474 |
| 13 | 20.867 | 5.20 | 4.00 | 3.00 | 20.867 | 20.867 |
| 13.5 | 20.867 | 5.20 | 4.00 | 3.00 | 20.867 | 20.867 |
| 14 | 30.384 | 7.97 | 6.59 | 4.79 | 30.384 | 30.384 |
| 15 | 31.350 | 8.26 | 6.00 | 4.40 | 31.350 | 31.350 |

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Sira Certification Service

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| EPL Da | | | | | | |
|----------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------------|--------------------------------|
| BPG ref. | Maximum Power Dissipation (W) | | | | | |
| | T6/T85°C Ta +40°C (max) | T6/T85°C Ta +55°C (max) | T6/T85°C Ta +60°C (max) | T6/T85°C Ta +65°C (max) | T5/T100°C Ta +55°C (max) | T4/T100°C Ta +90°C (max) |
| 1 | 4.195 | 1.115 | 0.865 | 0.725 | 4.195 | 4.195 |
| 2 | 4.2755 | 1 | 0.85 | 0.725 | 4.2755 | 4.2755 |
| 3 | 4.4165 | 1 | 0.85 | 0.725 | 4.4165 | 4.4165 |
| 4 | 4.506 | 1.035 | 0.9 | 0.645 | 4.506 | 4.506 |
| 5 | 4.63 | 1 | 0.85 | 0.55 | 4.63 | 4.63 |
| 6 | 4.689 | 1 | 0.85 | 0.725 | 4.689 | 4.689 |
| 7 | 5.25 | 1.15 | 0.85 | 0.55 | 5.25 | 5.25 |
| 8 | 5.174 | 1 | 0.85 | 0.55 | 5.174 | 5.174 |
| 9 | 5.9665 | 1.15 | 0.85 | 0.55 | 5.9665 | 5.9665 |
| 10 | 6.8965 | 2.25 | 1.645 | 1.05 | 6.8965 | 6.8965 |
| 11 | 9.169 | 3.34 | 2.6 | 2 | 9.169 | 9.169 |
| 12 | 7.737 | 1.15 | 0.85 | 0.55 | 7.737 | 7.737 |
| 13 | 10.4335 | 2.6 | 2 | 1.5 | 10.4335 | 10.4335 |
| 13.5 | 10.4335 | 2.6 | 2 | 1.5 | 10.4335 | 10.4335 |
| 14 | 15.192 | 3.985 | 3.295 | 2.395 | 15.192 | 15.192 |
| 15 | 15.675 | 4.13 | 3 | 2.2 | 15.675 | 15.675 |

Variation 1 - This variation introduced the following changes:

- i. The BPG range of junction boxes were permitted to have alternative power dissipation ratings that enable them to be used in an upper ambient temperature of either +40°C or +55°C or +60°C or +65°C, the associated ratings and markings were recognised.

Variation 2 - This variation introduced the following changes:

- i. The recognition of a minor revision of the information marked on the label.

Variation 3 - This variation introduced the following changes:

- i. When certified, intrinsically safe terminals are used, alternative marking, 'ia' and 'ib', was recognised.

Variation 4 - This variation introduced the following changes:

- i. The BPG 13.5 junction box covered by certificate number Sira 99ATEX3172U was added to the range.

Variation 5 - This variation introduced the following changes:

- i. The option to fit slotted trunking inside the Junction Boxes, this trunking may be sited as required. The instructions were modified to recognise additional restrictions associated with this change and a new Condition of Manufacture was introduced.
- ii. The recognition of minor drawing modifications including the introduction of a new company logo; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.

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Variation 6 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents previously listed in section 9, EN 50 014:1997 (amendments A1 to A2), EN 50 019:1994, EN 50020:2002 and EN 50281-1-1:1998, were replaced by those currently listed. As part of this change, the markings in section 12 were updated accordingly and the 'ia' marking previously included as Variation 1 (dated 30 March 2005) was removed.
- ii. The Condition of Certification that defined the ambient temperature range of specific types of gaskets was removed because only silicone rubber gaskets are now used in the construction of these Junction Boxes.
- iii. It was recognised that a new procedure for selecting terminals has been adopted by the manufacturer; this allows the terminals to be chosen from an Approved Component Document, Sira 12AC087, that is issued and controlled by Sira. The relevant Condition of Certification was amended to recognise this change.
- iv. The recognition of drawing modifications required for use with other certification associated with these products.
- v. The Condition of Certification dealing with power dissipation was modified.
- vi. A Condition of Certification that requires the manufacturer to monitor the status of previously certified devices was added.

Variation 7 - This variation introduced the following changes:

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- i. Using EN 60079-26, the junction boxes were allowed to be marked with 'Ex ia' and 'Ex ta' concepts for EPL levels Ga and Da, as a result of this change, the maximum power dissipation table was modified and a Special Condition for Safe Use was introduced necessitating the addition of an 'X' suffix to the certificate number.
- ii. IEC 60079-0:2011 was replaced by EN 60079-0:2012 in the list of standards.

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- i. The BPG range of junction boxes were allowed to be used in an upper ambient +55°C with a temperature class/surface temperature of T5/T100°C, the associated maximum power dissipation ratings (W) and markings were recognised.

Variation 8 - This variation introduced the following changes:

- i. To permit the replacement of the term 'ceramic' with 'the terminals shall have an insulation limiting temperature of 130°C minimum' in the Condition of Manufacture, when the junction boxes are marked for T4/100°C.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 Associated Sira Reports and Certificate History

| Issue | Date | Report/File no. | Comment |
|-------|-------------------|--------------------------|--|
| 0 | 19 January 2000 | R51X6055E | The release of the prime certificate. |
| 1 | 25 May 2001 | R51A6746A | The introduction of Variation 1. |
| 2 | 28 September 2001 | 53V7936 | The introduction of Variation 2. |
| 3 | 23 July 2002 | R53A9009A | The prime certificate was re-issued to permit the following: <ul style="list-style-type: none">• The incorporation of previous variations 1 and 2.• The lower ambient temperature range was confirmed as -65°C.• The introduction of the changes included in Sira report number R53A9009A. |
| 4 | 30 March 2005 | R53V10438A | The introduction of Variation 3. |
| 5 | 10 March 2008 | R51A17881A | This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 5, Issues 0 to 4 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The change of the Applicant's name, first recognised 31 January 2007, was re-confirmed.• The introduction of Variation 4. |
| 6 | 03 April 2012 | R26585A/00 | The introduction of Variation 5. |
| 7 | 11 June 2012 | R26585A/01 | Report R26585A/01 replaced report R26585A/00. |
| 8 | 24 October 2012 | R25164A/00 | This Issue covers the following changes: <ul style="list-style-type: none">• The introduction of Variation 6.• Because this certificate was re-issued, some Variations 1 and 2 were duplicated, this has been clarified and reflected in the certificate history; no technical changes were involved. |
| 9 | 07 April 2014 | R30711A/00 R32242A/00 | The introduction of Variation 7. |
| 10 | 08 July 2014 | R70004712A | The introduction of Variation 8. |
| 11 | 30 July 2014 | N/A | Issued to correct a typographical error. |

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

15.1 When used in an EPL ta (Da) application the power supply to the equipment is to be rated for a prospective short circuit current of not more than 10 kA.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)**

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

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17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 When the manufacturer has equipped the junction boxes with terminals, a routine electric strength test shall be carried out only if the components are wired. This test shall be carried out according to the following standards:
 - industrial control equipment: EN 60947 - measurement, control and laboratory use: EN 61010
- 17.4 The terminals used in these Junction Boxes will be ATEX approved devices chosen from the Approved Component Document number Sira 12AC087 that is issued by Sira. All terminals will be installed in accordance with their certificate conditions and the relevant codes of practice/wiring regulations paying particular attention to the following:
 - The maximum service temperature range.
 - The minimum creepage and clearance distances shall be maintained.
 - The rated voltages and currents may vary if cross-connection facilities are used.
 - The reduction in rating of adjacent terminals shall be observed, where applicable.

The terminals fitted into the junction boxes shall also conform to the following requirements:

| Temperature class/ Dust marking | Requirement |
|------------------------------------|--|
| T6/T85°C | The terminals shall have an insulation limiting temperature of 100°C minimum |
| T4/T100°C | The terminals shall have an insulation limiting temperature of 130°C minimum |

- 17.5 Suitably certified Ex e equipment such as breathing devices and blanks may be fitted to the enclosure providing the enclosure maintains compliance with BS EN 60529 code IP64 or better.
- 17.6 The manufacturer will take all reasonable steps to ensure that the power dissipated by the Junction Box does not exceed the maximum value stipulated in the table detailed in the Description of Equipment, in addition, the manufacturer will supply all the relevant information that will enable the user/installer to calculate the dissipated power in Watts for each Junction Box in accordance with EN 60079-7 Annex E, E2.
- 17.7 When the junction boxes are used for intrinsically safe applications, a 3 mm separation distance between the enclosure is required, there shall also be a minimum of 6 mm between different intrinsically safe circuits.
- 17.8 When trunking is fitted, it may be sited as required and the minimum creepage and clearance distances shall still be met.
- 17.9 The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer will inform Sira of any modifications of the devices that may impinge upon the explosion safety design of their products.

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Certificate Annexe

Certificate Number: Sira 99ATEX3173X
Equipment: BPG Range of Junction Boxes
Applicant: ABTECH Limited



Issue 0 to 2: The drawings associated with these Issues were rationalised by those listed in Issue 3.

Issue 3

| Number | Sheet | Rev. | Date | Description |
|-----------|--------|------|-----------|---------------------------------|
| ABT 10260 | 1 of 1 | C | 25 Jun 02 | External Label (BPG) |
| ABT 10304 | 1 of 1 | A | 16 Nov 99 | BPG Manufacturing Specification |

Issue 4

| Number | Sheet | Rev. | Date | Description |
|-----------|--------|------|-----------|------------------------|
| ABT 14842 | 1 of 1 | - | 01 Feb 05 | BPG Range EEx ia Label |
| ABT 14845 | 1 of 1 | - | 01 Feb 05 | BPG Range EEx ib Label |

Issue 5: No new drawings were introduced.

Issue 6

| Drawing | Sheets | Rev. | Date (Sira Stamp) | Title |
|-----------|--------|------|-------------------|-------------------------------------|
| ABT 10260 | 1 of 1 | D | 30 Mar 12 | BPG External label – Junction Boxes |
| ABT 10304 | 1 of 1 | B | 30 Mar 12 | BPG Manufacturing specification |
| ABT 14842 | 1 of 1 | B | 30 Mar 12 | BPG Range EEx ia Label |
| ABT 14845 | 1 of 1 | B | 30 Mar 12 | BPG Range EEx ib Label |

Issue 7 (No new drawings were introduced.)

Issue 8

| Drawing | Sheets | Rev. | Date (Sira Stamp) | Title |
|-----------|--------|------|-------------------|---------------------------------|
| ABT 10260 | 1 of 1 | E | 30 Sep 12 | BPG Nameplate – Junction Box |
| ABT 10304 | 1 of 1 | C | 30 Sep 12 | BPG Manufacturing specification |
| ABT 10305 | 1 of 1 | C | 30 Sep 12 | BPG Range of Enclosures |

Issue 9

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| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|----------|--------|------|-------------------|-----------------------|
| ABT10260 | 1 of 1 | F | 30 Oct 13 | BPG Range Ex e Label |
| ABT14842 | 1 of 1 | C | 10 Oct 13 | BPG Range Ex ia Label |

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| Drawing | Sheets | Rev. | Date (Sira stamp) | Title |
|----------|--------|------|-------------------|---------------------------|
| ABT26528 | 1 of 1 | A | 19 Dec 13 | External ATEX Label (BPG) |
| ABT16689 | 1 of 1 | C | 19 Dec 13 | BPG Manufacturing Spec |

Issues 10 and 11 (No new drawings were introduced.)

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