



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: Sira 02ATEX3266

4 Equipment: HVJB Junction Boxes

5 Applicant: A B Controls & Technology Limited

6 Address: Sanderson Street  
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 confidential report number R53A9233A.

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 50014:1997 (A1 and A2)  
EN 50019:2000  
EN 50281-1-1:1998

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 2GD  
EEx e II T4

Project Number 53A9233  
Date 11 October 2002  
C. Index 04

M D Shearman  
Certification Manager

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**Sira Certification Service**

Rake Lane, Eccleston, Chester, CH4 9JN, England  
Tel: +44 (0) 1244 670900 Fax: +44 (0) 1244 681330  
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## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

Sira 02ATEX3266

#### 13 DESCRIPTION OF EQUIPMENT

The HVJB junction boxes are rated at 11 kV with a maximum dissipated power of 259 W for the HVJB-7 and 346 W for the HVJB-8.

The enclosures of the HVJB Junction Boxes are covered by certificate Sira 99ATEX3170U, coded EEx e II. Inside the enclosure, the HVJB Junction Boxes utilise an arrangement of up to four copper busbars to provide connection facilities. These busbars are supported on insulators and may accommodate two cables per phase, a single cable per phase or a combination depending on the arrangement. Connecting cables are terminated in crimped cable lugs that are sandwiched between bus bars. Insulated partitions are fitted between bus bars to improve clearance distances between live parts.

#### 14 DESCRIPTIVE DOCUMENTS

14.1 Drawing No.	Sheet	Rev.	Date	Title
ABT12013	1 of 1	A	19 Jun 02	HVJB Certification Label
ABT12009	1 of 1	A	17 Jun 02	HVJB-8
ABT12010	1 of 1	A	17 Jun 02	HVJB-7

14.2 Report No. R53A9233A

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

None

#### 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 Report No. R53A9233A.


#### 17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of SCS 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 If the terminals are fitted with cables by the manufacturer, then a routine electric strength test shall be carried out in accordance with EN 50019:2000 clause 7.1.

17.4 This certificate relies on the following previously certified products. When used as part of the HVJB Junction Boxes, the key attributes listed in the table below shall still be maintained by their original certificate.

Product	Certificate number	Key attributes
SX Range of enclosures	Sira 99ATEX3170U	 II 2GD EEx e II

Date 11 October 2002

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**EC TYPE-EXAMINATION CERTIFICATE VARIATION**

**CERTIFICATE NUMBER** Sira 02ATEX3266 Dated 11 October 2002

**VARIATION NUMBER** 1 (ONE) Dated 22 June 2005

**VARIATION TO EQUIPMENT**

To permit:

- 1 The addition to the range of an HVJB-8 Junction Box with 2 way, or 3 way main terminals and a selection of EEx e auxiliary "field" terminals.
  - Maximum dissipated power of EEx e auxiliary "field" terminals and wiring = 86.5 W
  - Maximum dissipated power of 3 main terminals and wiring = 259.5 W
  - Total maximum dissipated power = 346 W

**DESCRIPTIVE DOCUMENTS**

Number	Sheet	Rev	Date	Description
ABT13132	1 of 1	A	20 June 03	HVJB-8 – 2 or 3 way with Field Terminals

**CONDITIONS OF CERTIFICATION**

Condition 17.4 replaces that listed in the original certificate.

17.4 This certificate relies on the following previously certified products. When used as part of the HVJB Junction Boxes, the key attributes listed in the table below shall still be maintained by their original certificate.

Product	Certificate number	Key attributes
SX Range Enclosures	Sira 99ATEX3170U	EEx e II
Any Suitably Certified ATEX EEx e Terminal	Any Suitably Certified	EEx e II

17.5 When installed the EEx e auxiliary "field" terminals must have at least 12 mm creepage and 10 mm clearance between live parts and conductive metal parts.

17.6 When the HVJB Junction Box is fitted with field terminals, the total dissipated power for the field terminals and wiring shall be calculated in accordance with EN 50019:2000, Annex C, C.2, and shall not exceed 86.5 W.

**File No** 53A10486  
**Report No.** R53A10486A

**D R Stubbings**  
**Certification Manager**

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## EC TYPE-EXAMINATION CERTIFICATE VARIATION

**CERTIFICATE NUMBER** Sira 02ATEX3266 Dated 11 October 2002  
**VARIATION NUMBER** 2 (TWO) Dated 15 August 2006

### VARIATION TO EQUIPMENT

To permit:

- 1 A suitably certified and dimensioned heater to be fitted, this heater is defined as "Any suitably certified and dimensioned heater that is fitted with a thermostat set to a maximum of 25°C".
- 2 The sizes of the enclosure to be increased.

### DESCRIPTIVE DOCUMENTS

Drawing	Sheet	Rev.	Date	Description
ABT16360	1 of 1	A	(Sira Stamp) 11 July 2006	HVJB125

### ADDITIONAL CONDITIONS OF CERTIFICATION

- 17.7 This certificate relies on the following previously certified products. When used as part of an SX Junction Box that is fitted with anti-condensation heater that includes a thermostat, the key attributes listed in the table below shall still be maintained by their original certificate.

Description	Certificate number	Key attributes
Anti-condensation heater fitted with a thermostat	As appropriate	Suitably certified by a notified body as a piece of equipment with a T6 temperature classification.

The manufacturer shall ensure that the previously certified heater that includes a thermostat is being used within the scope, the ratings and any special conditions for safe use that are specified in its associated certificate.

**File No.** 51A15308

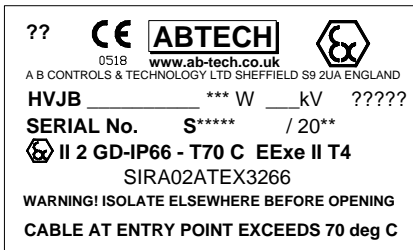
**Report No.** R51A15308A

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**C Ellaby**  
Certification Officer



# INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR ABTECH 'HVJB' series – SIRA01ATEX3266



## Marking

The maximum power dissipation and voltage permitted in this terminal box are marked on the label and identified as \*\*\*W and \_\_\_kV. The ambient temperature range for which this product is suitable is -20 to +40°C

## Installation

- 1) Using the mounting dimensions data provided, either in the product catalogue data sheets or on the drawings supplied (as part of the project documentation) mark out the positions for the mounting holes on the surface where installation is required.
- 2) Drill the mounting holes for either M8 or M9 fixing studs.
- 3) Insert the top two studs leaving 8 to 10mm protruding and lift the enclosure into position using such assistance as may be necessary to avoid injury and hang the top fixing brackets of the box onto the studs. Ensuring that the box is secure, insert and tighten the bottom two studs. Now complete tightening the top two studs.
- 4) Unfasten the lid securing screws and remove the enclosure lid. Put the lid in a safe place.
- 5) Install and secure the cable glands in accordance with the manufacturers instructions.

## Main Power Cable Connections

- 6) Remove the top half on each power core cable clamp and put safely aside.
- 7) Remove the terminal post lock nuts, washers and the upper current bars and put safely aside.
- 8) Pull the cables into the box leaving trailing leads long enough to reach their respective crimp lugs after routing through the cable clamps.
- 9) Trim each cable core so that the conductor end will reach the inside stop of the crimp lug on which it is to be terminated.
- 10) Strip the insulation of each cable core by the length of the crimping barrel plus 2mm.
- 11) Remove each crimping lug in turn from the terminal post and place the securing nuts to one side.
- 12) Crimp each lug onto the respective conductor using Cembre die sets or equivalent. Ensure that the crimp die set used is suitable for the conductor size and is not damaged or excessively worn. The crimp die set may produce either a hexagon type crimp or an indent type crimp. With hexagon die sets execute at least two crimps on each lug.
- 13) Route the cable core through the appropriate cable clamp and place the hole in the palm of the now attached cable lug on to its respective terminal post, on top of the lower current bar.
- 14) Replace the upper current bar and secure it in place with the flat washer, spring washer and two locknuts provided. Ensure that the spring washer is fully compressed by the first lock nut then apply a further 1/8 to 1/4 turn. Secure the fitting with the second lock nut.
- 15) When all the cable lugs have been attached and correctly tightened replace the top halves of the power core cable clamps and tighten each one to secure the cables.
- 16) If no field terminals are used proceed to point 28.

## Field Terminal cable connections

**Note:** Consideration must be given to any use limitations or special conditions detailed on the certificates for the terminals fitted.

- 17) Remove the top half on each field core cable clamp and put safely aside.
- 18) Remove the terminal covers and put safely aside.
- 19) Remove the terminal current bar connection studs and put safely aside.

- 20) Pull the cable(s) into the box leaving trailing leads long enough to reach their respective crimp lugs after routing through the cable clamps.
  - 21) Trim each cable core so that the conductor end will reach the inside stop of the crimp lug on which it is to be terminated.
  - 22) Using the crimp lugs provided, **If the field cables are 10 mm<sup>2</sup> or larger** crimp each lug onto the respective conductor using Cembre die sets or equivalent. Ensure that the crimp die set used is suitable for the conductor size and is not damaged or excessively worn. The crimp die set may produce either a hexagon type crimp, (2 crimps per lug), or an indent type crimp.
  - 23) **If the filed cables are smaller than 10 mm<sup>2</sup>** crimp each lug using a Newey and Eyre Crimstar crimping tool or equivalent. Ensure that the crimping tool is not damaged or excessively worn.
- NOTE:** *If the crimp lug is damaged during installation a replacement should be purchased from either ABTECH, Cembre (+44 (0)1675 470440, or one of their stockists. If the site engineer requires to source from a local supplier then that engineer will be responsible for ensuring that the crimp lug and its associated crimping tool comply with BS EN 31238-1:2003.*
- 24) Route the cable core through the appropriate cable clamp and place the hole in the palm of the now attached cable lug above the hole on its respective terminal current bar.
  - 25) Retrieve the current bar connection stud and use it to secure the lug in place.
  - 26) When all the cable lugs have been attached and correctly tightened replace the terminal covers.
  - 27) Replace the top halves of the field core cable clamps and tighten each one to secure the cables.
  - 28) Replace the lid and secure it by closing the lid and tightening the lid fixing screws. Ensure that all gland plate securing screws are tightened.
  - 29) Test the installation

Earthing/Grounding

The HVJB unit is provided with an internal and external earthing/grounding facility. This must be connected to the appropriate earth bonding circuit before electrical power is connected to the contents of the enclosure. Any earth/ground conductor brought into the enclosure must be terminated onto the enclosure internal earth/ground stud.

Operation

1. The lid must be secured using all the lid screws provided in order to maintain the IP rating.
2. No attempt must be made to remove the enclosure lid whilst electrical power is connected to the contents of the enclosure.
3. The earthing/grounding facility must be connected to the earth bonding circuit at all times when electrical power is connected to the enclosure.

Maintenance

The laws of the applicable country must be considered and maintenance checks carried out accordingly.

Additional checks that are advisable to ensure the efficiency of ABTECH 'S' range enclosures on which the HVJB is based are:-

Activity	Frequency
1 Check that the lid seal is not damaged and is in place	Each time the enclosure is opened
2 Check that all lid fixing screws are in place and secured	Each time the enclosure is opened
3 Check that all gland plate fixing screws are in place and secured	Each time the enclosure is opened
4 Check that the mounting bolts are tight and free of corrosion	Annually
5 Check the security of all cable glands	Annually
6 Check the enclosure for damage	Annually

Chemical attack

The ABTECH HVJB is manufactured from 316 stainless steel. The following additional material are also used:

Neoprene or silicone rubber,  
Copper,  
Brass,  
Cast epoxy resin,  
Polyamide.

Consideration should be given to the environment in which these enclosures are to be used to determine the suitability of these materials to withstand any corrosive agents that may be present.

Static hazard

The HVJB does not present a hazard from static electricity.

Vibration

The HVJB is designed for use in areas subject to normal industrial levels of vibration. They are not designed for use in areas subject to intentional or extreme conditions of vibration.