



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 99ATEX3176** Issue: **3**

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

5 Applicant: **ABTECH Limited**

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

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: 2006

EN 61241-0: 2006

EN 60079-7: 2003

EN 61241-1: 2006

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 G D

Ex e II T6 (Ta -50°C to + XX°C) (upper ambient limit selected in accordance with table 2).

Ex tD A21 IP66 T85°C

Project Number 51A17090
C. Index 04

C Ellaby
Certification Officer

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

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13 DESCRIPTION OF EQUIPMENT

The Type MJB Junction Box range consists of four enclosure sizes from a range of component certified increased safety enclosures, SIRA99ATEX3170U, which are populated with three terminal posts and two cable clamping rails. The terminal posts and clamping rails both include an intermediate insulating post that ensures electrical insulation between the connected conductors and the enclosure.

The maximum voltage ratings for each of the following sizes of Junction Box are as shown in Table 1.

Table 1 Minimum MJB Size

Voltage	Cable Size (mm ²)							
	35	50	70	95	120	150	185	240
6600 V	MJB SX5	MJB SX5	MJB SX5	MJB SX5	MJB SX5	MJB SX7	MJB SX7	MJB SX7
8300 V	MJB SX5	MJB SX7	MJB SX7	MJB SX7	MJB SX7	MJB SX7	MJB SX7	MJB SX7

The maximum permitted power dissipation for each of the sizes of Junction Box, with reference to a T6 temperature classification, is as shown in Table 2.

Table 2

Junction Box	Maximum Power Dissipation (W)	
	-50°C to +40°C ambient	-50°C to +65°C ambient
MJB SX5	16	5
MJB SX6	23	7
MJB SX7	33	10
MJB SX8	50	16

Variation 1 - This variation introduced the following changes:

- i. The addition of a 4 way Type MJB Junction Box; in this form the GRP rail and cable clamps are mandatory not optional.
- ii. The 4 way Type MJB Junction Box was permitted to be used with additional cable sizes, namely 6 mm² to 25 mm².
- iii. The range of MJB Junction Boxes was extended to include versions that incorporate high temperature insulated terminal posts.

Variation 2 - This variation introduced the following changes:

- i. Additional earthed studs were fitted between the main terminal insulators at the rear of the junction box, thus allowing a duplicate set of supply cables to be installed; in this configuration the maximum voltage is limited to 6.6 kV
- ii. The modification of drawings to clarify the specification of the stand off insulators.

Variation 3 - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 and the EN 61241 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2), EN 50019:2000 and EN 50281-1-1:1998, were replaced by EN 60079-0:2006, EN 60079-7:2003, EN 61241-0:2006 and EN 61241-1:2006, the markings in section 12 were updated accordingly.

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Sira Certification Service

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14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report/File No.	Comment
0	7 March 2000	R51X6055B	The release of the prime certificate.
1	21 Jun 2001	R53A7935A	The introduction of Variation 1.
2	3 September 2001	53V8277	The introduction of Variation 2.
3	26 February 2008	R51A17090A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 3, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The introduction of Variation 3.• The change of the company name from AB Controls and Technology, first recognised 31 January 2007.

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 the reports listed in Section 14.2.

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 If the terminals are fitted with cables by the manufacturer, then a routine electric strength test shall be carried out in accordance with EN 60079-7: 2003 clause 6.1.

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Certificate Annexe

Certificate Number: Sira99ATEX3176
Equipment: MJB Range of Junction Boxes
Applicant: ABTECH Limited



Issue 0

Drawing	Sheet	Rev.	Date	Title
ABT 10329	1 of 2	A	16 Nov 99	MJB
ABT 10329	2 of 2	A	16 Nov.99	MJB
ABT 10263	1 of 1	A	21 Dec 99	External Label (MJB)
ABT 10336	1 of 1	A	06 Dec 99	Machining of Stand Off Insulator

Issue 1

Drawing	Sheet	Rev	Date	Description
ABT 10329	1	B	11 Jun 01	MJB
ABT 10329	2	B	11 Jun 01	MJB
ABT 11259	1	A	11 May 01	4 Way MJB Arrangement
ABT 11259	2	A	29 May 01	4 Way MJB Arrangement

Issue 2

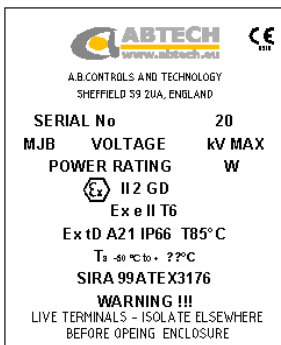
Drawing	Sheet	Rev	Date	Description
ABT 11298	1 of 2	A	30 May 01	MJB
ABT 11298	2 of 2	A	30 May 01	MJB
ABT 11259	1 of 1	B	29 Aug 01	MJB
ABT 10336	1 of 1	B	29 Aug 01	Machining of Stand Off Insulator

Issue 3

Drawing	Sheet	Rev	Date	Description
ABT 10263	1 of 1	B	06 Dec07	Certification Label

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INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS FOR ABTECH 'MJB' RANGE ENCLOSURES – SIRA99ATEX3176



Marking

The marking shown is for an apparatus certified terminal box.

The maximum voltage and power dissipation permitted in this terminal box are marked on the label and identified by VOLTAGE__kV MAX and RATING_____WATTS respectively.

The ambient temperature range for which this product is suitable is marked on the label and identified by Tamb_____.

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 (for size S64 upwards) or for M6 fixing studs for size S45.
- 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.
- 6) Pull the cables into the box leaving trailing leads long enough to reach their respective couplers after routing through any cable clamps that are provided.
- 7) 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.
- 8) Strip each cable core insulation by the length of the crimping barrel plus 2mm.
- 9) Remove each crimping lug in turn from the terminal post and place the securing nuts to one side.
- 10) 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.
- 11) Place the hole in the palm of the now attached cable lug on to its respective terminal post. When both cable lugs for a terminal post have been attached secure them in place with the flat washer, spring washer and nut provided. Ensure that the spring washer is fully compressed then apply a further ¼ turn.
- 12) When all the cable lugs have been attached and correctly tightened 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.

Earthing/Grounding

All MJB range enclosures are 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. If the MJB unit is to be used for three phase distribution any earth/ground conductor brought into the enclosure must be terminated onto the enclosure internal earth/ground stud. If the MJB unit is to be used for single phase or DC distribution any earth/ground conductor entering the enclosure may be terminated onto the otherwise unused post terminal

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

Routine maintenance is likely to be a requirement of local Health and Safety legislation. 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 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 MJB units are manufacture from 316 stainless steel. The following additional material are also used :-

Neoprene or silicone rubber,
Brass,
Cast epoxy resin.

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

MJB units do not present a hazard from static electricity.

Vibration

MJB range terminal boxes are 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.

Protection From Foreseeable Faults

Circuits connected in the enclosure must be externally protected using suitable circuit interruption devices to prevent overloading. Provided the enclosure is correctly installed, there should be no foreseeable faults.