sira
Certification Service

1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: Sira 01ATEX3214

4 Equipment: DPJB Range of Junction Boxes

5 Applicant: A B Controls & Technology

6 Address: Sanderson Street
Sheffield
S9 0YA

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 R51X6055F.

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 (+amendments 1 and 2)
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 2 G D
EEx e II T6 or T4

Project Number 51X6055
Date 17 December 2001
C. Index 04

M D Shearman
Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 01ATEX3214

13 **DESCRIPTION OF EQUIPMENT**

The DPJB Junction box is a stainless steel enclosure containing connection facilities for supply cables up to 630 mm^2 cross sectional area. The junction box is rated at 11 kV, 8.3 kV or 6.6 kV with power output up to 48.6 W and T6 temperature class.

The enclosure is component certified Sira 99ATEX3170U coded EEx e II. Inside the enclosure glass reinforced polyester rails are fixed to the rear panel and these provide the mounting point for cable clamps and cable coupler clamps.

The cable couplers comprise moulded insulation around a copper bar that is machined to accept specially designed crimp cable lugs or an intermediate connection device, either being secured with two fixing screws. The intermediate connection device may be a 'Splitter Bar' or a 'Type Changer'. The 'Splitter Bar' permits the connection of up to three cable lugs to the end of the coupler bar. The 'Type Changer' permits the connection of up to two cable lugs to the end of the coupler bar or up to four cable lugs when used with the 'Splitter Bar'. When the 'Type Changer' is used the maximum voltage of the DPJB-9 and DPJB-11 is limited to 8.3kV. The crimp cable lugs for connection to the 'Type Changer' are secured using one fixing screw.

Cable entry may be through opposite sides of the junction box. Alternatively, all the cables may enter via one side with one set turned through 180° and clamped in a suitable position for the termination or cable couplers.

The DPJB enclosures may be supplied with an internal division to separate the bus bars from low power control and fibre optic circuits. When fibre optic terminals are fitted, these are housed in a component certified EEx e II enclosure fitted with suitably certified cable glands. When current carrying terminals are fitted, these are housed in a suitably certified EEx e II T6 junction box.

Trace heating cables manufactured by Raychem, type BTV covered by BAS98ATEX2338X coded EEx e II T6 may also be fitted inside the enclosure. In this arrangement the temperature class of the DPJB junction box is T4.

14 **DESCRIPTIVE DOCUMENTS**

14.1

Drawing	Sheet	Rev	Date	Title
ABT 10266	1 of 1	A	7 Sept 01	External label (DPJB)
ABT 11445	1 of 1	A	7 Sept 01	DPJB-11 General Arrangement Maximum operating voltage 11 kV
ABT 11446	1 of 1	A	7 Sept 01	DPJB-11 General Arrangement Maximum operating voltage 11 kV
ABT 11467	1 of 1	A	7 Sept 01	DPJB-3 General Arrangement Maximum operating voltage 6.6 kV
ABT 11448	1 of 1	A	7 Sept 01	DPJB-3 General Arrangement Maximum operating voltage 6.6 kV
ABT 11469	1 of 1	A	6 Sept 01	Phase separator plates
ABT 11470	1 of 1	A	6 Sept 01	ABTECH Coupler Crimp Socket variations and accessories
ABT 11471	1 of 1	A	11 Sept 01	Coupler Clamp
ABT 11604	1 of 1	A	5 Jul 01	6.6 kV Partitioned DPJB
ABT 11606	1 of 1	A	22 Nov 01	Phase Separator

14.2 Report No. R51X6055F

Date 17 December 2001

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SCHEDULE

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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. R51X6055F.

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

Product	Certificate number	Key attributes
SX Range Enclosure	Sira 99ATEX3170U	EEx e II
BTV Range of trace heating units	BAS 98ATEX2338X	EEx e II T6

17.4 An electric strength test shall be carried out only if the junction box contains wiring. The test shall be performed in accordance with EN 50019:2000 clause 7.1.

17.5 When Raychem BTV trace heating cables (BAS98ATEX2338X) are fitted, this is permitted subject to the manufacturer fulfilling the requirements of the special conditions for safe use attached to that certificate.

17.6 The SX225 enclosure shall not be used in the construction of the DPJB range of junction boxes.

Date 17 December 2001

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EC TYPE-EXAMINATION CERTIFICATE VARIATION

CERTIFICATE NUMBER	Sira 01ATEX3214	Dated Re-issued	17 December 2001 14 March 2002
VARIATION NUMBER	1 (ONE)	Dated	1 October 2002

VARIATION TO EQUIPMENT

To permit:

1 The option to add Rogowski coils to the DPJB Range of Junction Boxes; these coils are manufactured by Dowding & Mills Limited and are certified as EEx e II T6 T_{amb} -20°C to 60°C by certificate number BAS00ATEX2051. Condition of certification clause 17.3 is amended as a result of this addition.

DESCRIPTIVE DOCUMENTS

Number	Sheet	Rev	Date	Description
ABT12202	1 of 1	A	03 Sept 02	Rogowski Coil – Installation Notes

AMENDED CONDITION OF CERTIFICATION

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

Product	Certificate number	Key attributes
SX Range Enclosure	Sira 99ATEX3170U	EEx e II
BTV Range of trace heating units	BAS 98ATEX2338X	EEx e II T6
Coil Assembly Type PDC-85 (Rogowski coils)	BAS 00ATEX2051	EEx e II T6

File No 53A9511

Report No. R53A9511A

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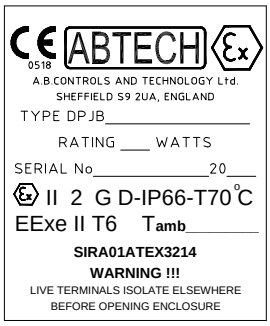
DPJB - INSALLATION, OPERATION & MAINTENANCE INSTRUCTIONS



Marking

The marking shown is for an apparatus certified DPJB connection box.

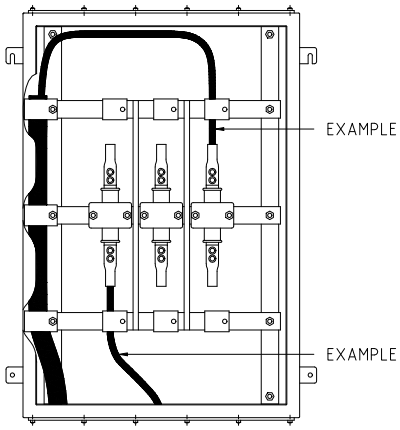
The maximum power dissipation in this terminal box is marked on the label and identified by RATING_____WATTS.

The ambient temperature range for which this product is suitable is marked on the label and identified by T_{amb}____ if above +40°C or below –20°C

Installation Instructions

Note: *Consideration must be given to the possibility of electric fields strong enough to cause air ionisation (corona) which can result in flashover. These may result from inappropriate cable layout and/or inadequate conductor screening. Where such fields are considered possible steps should be taken to minimise the risk. ABTECH do not make recommendations in this respect and the responsible site engineer must be consulted.*

1) Secure the box to its mounting location using four machine screws of minimum size M8.
2) Open the box door by loosening all of the fixing screws and swinging the door on its hinges. The lid screws are captive but DO NOT LOSE THE SCREWS.
3) Lift off the door and place securely.
4) For each cable to be installed, measure the route each cable core will follow and record the longest distance measured.



5) If the gland plate(s) is/(are) un-drilled remove it/(them) and drill the cable gland entry. DO NOT LOSE THE SECURING SCREWS. Otherwise remove the blanking plug from the cable entry.
6) Removal of the gland plate for installation of the cable and cable gland is optional. If the gland plate is removed DO NOT LOSE THE SECURING SCREWS.
7) If not already fitted, install the cable gland(s). This should be done in a manner to maintain the minimum IP66 rating, in accordance with the manufacturer's instructions.

DPJB - INSALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

8) For each cable to be installed, insert the cable through the gland and pull a length of cable through the cable gland at least equal to the longest distance measured in 3) above, INCLUDING an additional 25mm for the crimping barrel. **NOTE :-** Unused cable entries should be fitted with waterproof blanking plugs, removable only with a tool. If plastic blanking plugs are used they must be EEx e certified.

9) Re-affix the gland plate.

10) Strip the inner sheath over the cable core insulation back to 25mm from the last multi-core clamping position. The cable gland in also a designated clamping position. **NOTE: -** If only single core cables are being used any sheath over the core insulation should be stripped back to 25mm from the cable gland.

11) Remove the top half of each cable clamp and place each cable along its intended route through the remaining halves of the cable clamps.

12) Offer up each conductor core to its appropriate crimp lug to check for adequate length. There must be sufficient conductor core to reach the crimp lug with at least 25mm to spare.

13) Strip a minimum of 25mm (maximum of 30mm) of insulation from the end of the conductor core

14) Remove the crimp lug from its coupler and clean the inside of the crimp barrel using emery cloth or stainless steel wire wool. Insert the conductor into the crimp lug barrel. Rotate the lug to ensure that it will lie flat with the coupler bar and crimp onto the cable core using a crimping tool appropriate to the cable size. Either an indent or HEX crimp tool may be used.

15) Repeat with the other cable cores and secure them to the appropriate couplers using the M10 socket head machine screws and spring washers provided. It is not necessary to use a torque wrench, but the fitter should ensure that they are properly tight without damaging the threads.

16) Check that all connection lugs have been fully tightened down.

17) Clear debris from the inside of the box.

Replace the door on its hinges, close and secure the door using all of the fixing screws.

NOTE :-

The IP rating cannot be guaranteed unless all lid and gland plate fixing screws are in place and properly secured.

Earthing / Grounding

All DPJB units 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 DPJB terminals. When used for three phase power distribution any earth/ground conductor brought into the box must be terminated on the internal earth/ground stud. When used for single phase or DC applications the spare terminal may be used for earth continuity connection.

Operation instructions

1. The lid must be secured using all the lid screws provided to maintain the IP rating of the enclosure.
2. No attempt must be made to open the enclosure 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.

DPJB - INSALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

Maintenance instructions

Routine maintenance is a requirement of BS5345 : Part 1 : 1989 as is likely to be a requirement of local health and safety legislation. The laws of the applicable country must be considered and maintenance checks performed accordingly. Additional checks that are advisable to ensure the efficiency of the enclosure IP rating 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 DPJB units are manufactured in 316 stainless steel. Other materials may include Neoprene or silicone rubber, brass, cast epoxy resin, copper, GPR, styrene, Acetal and Nylon. Consideration should be given to the environment in which the unit is to be used to determine the suitability of these materials to withstand any corrosive agents that may be present.

Vibration

DPJB units are designed to 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.

Static hazard

DPJB units do not present a hazard from static electricity.