



## EC Type Examination Certificate CML 13ATEX3011X Issue 1

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC
- 2 Equipment **The SX Range I/O Junction Boxes**
- 3 Manufacturer **Abtech Limited**
- 4 Address Sanderson Street,  
Lower Don Valley,  
Sheffield,  
S9 2UA,  
UK
- 5 The equipment is specified in the schedule of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 9 of Directive 94/9/EC, 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 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EC Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 94/9/EC Article 8 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN 60079-0:2012

EN 60079-7:2007

EN 60079-31:2009

- 10 The equipment shall be marked with the following:



II 2 (1 G) G D

Ex e [ia Ga] IIC T4 Gb  
Ex tb [ia Ga] IIIC T130°C Db  
IP66

Ta= -20°C up to +50°C



II 2 (2 G) G D

Ex e [ib op is] IIC T4 Gb  
Ex tb [ib op is Gb] IIIC T130°C Db  
IP66

Ta= -20°C up to +50°C



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## 11 Description

The SX Range I/O Junction Boxes is a remote I/O system for use in the hazardous area. The SX Range I/O Junction Boxes are constructed of an SX enclosure, Sira 99ATEX3170U and have either a nine or eighteen module rack fitted, which accommodates a separately certified I/O Fieldbus system, covered by PTB 03ATEX1028.

The module racks are fitted with up to two power supplies, up to two gateways and up to sixteen I/O modules. Additionally, fibre-optic couplers, a heater and accessories such as control components may be fitted, in accordance with Excom I/O Fieldbus system certificate PTB 03 ATEX 1028.

<b>Technical data:</b>			
<b>General</b>		<b>Condensation Heater (When fitted)</b>	
Up to 40 V		Up to 230V	
Max. 11 A		Max. 0.57A	
Up to 59 W (see below)		Max. 130W (100 W Nominal)	
9-way Enclosure fitted with mounted module racks of type codes: 11, 12, 13:		18-way Enclosure fitted with mounted module racks of type codes: 01, 02, 03 and 11, 12, 13:	
<b>Maximum ambient temperature range</b>			
≤20 W	-20°C to +50°C up to 24 W at terminals	≤30 W	-20°C up to +50°C up to 20 W at terminals
≤30 W	-20°C to +48°C up to 14 W at terminals	≤40 W	-20°C up to +50°C up to 10 W at terminals
		≤50 W	-20°C to +45°C
		≤59 W	-20°C to +40°C
<b>Max. rated conductor cross section</b>		<b>Max. rated conductor cross section</b>	
4 mm <sup>2</sup> rigid 2.5 mm <sup>2</sup> flexible		Type codes: 01 and 02 only: 2.5 mm <sup>2</sup> rigid 2.5 mm <sup>2</sup> flexible	
		Type codes:03, 11, 12 and 13: 4 mm <sup>2</sup> rigid 2.5 mm <sup>2</sup> flexible	

The enclosure may also be fitted with additional appropriately certified terminals for field connections.

## 12 Document history and evaluation reports

<b>Issue</b>	<b>Date</b>	<b>Report</b>	<b>Notes</b>
1	14 Nov 2013	R01/A	Issue of prime certificate

Note: Drawings that describe the equipment are listed in the Annex.



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### **13 Conditions of manufacture**

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 Where the product incorporates certified components and/or equipment the manufacturer shall ensure that any changes to those components do not affect the compliance of the certified product that is the subject of this certificate.
- 13.2 The service temperature of the enclosure window shall not exceed 80°C.
- 13.3 A specific datasheet and instructions shall be provided for each system arrangement provided, stating what component parts are or can be fitted, the specific voltage, current and power ratings, as well as the maximum ambient temperature range for that specific enclosure arrangement.
- 13.4 The marking of the ambient temperature range and input parameters shall be allocated in accordance with the specific arrangements fitted.
- 13.5 The creepage and clearance requirements between intrinsically safe circuits and between intrinsically safe and non-intrinsically safe circuits shall be in accordance with section 6.3 of IEC 60079-11.
- 13.6 A copy of the instructions and certificate for each separately certified component part shall be supplied with each system, including a copy of each component part supplied under the PTB 03ATEX1028 certification, where applicable.
- 13.7 When fitting a condensation heater, the installation location shall be made with regard to the maximum permissible temperatures of neighbouring components.
- 13.8 When fitted the heaters shall be installed with a thermostat to ensure heater does not raise ambient temperature above 25°C

### **14 Special Conditions for Safe Use (Conditions of Certification)**

The following conditions relate to safe installation and/or use of the equipment.

- 14.1 The creepage and clearance requirements between intrinsically safe circuits and between intrinsically safe and non-intrinsically safe circuits shall be in accordance with EN 60079-14. If clearance requirements as specified in EN 60079-11, section 6.3 are not met, terminals and wiring that meet the quality criteria for increased safety (Ex e) shall also be used for the intrinsically safe circuits.
- 14.2 Any components attached or installed to this equipment shall be appropriately separately certified, suitable for the operating conditions and hazardous area location. Installation shall also take into account the maximum permissible temperatures of neighbouring components and the enclosure, as well as the effect on the T4 temperature classification.
- 14.3 When the Excom system power rating is greater than 50W, any additional and separate terminals shall only be used for signal voltages and currents without additional temperature assessment to ensure T4 temperature class is not exceeded and the window section does not exceed 80°C.
- 14.4 When fitted the heaters shall be installed sufficiently apart from other components and viewing window so as not to directly affect components local ambient and with thermostat upper setting not greater than 25°C.



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- 14.5 The SX Range I/O Junction Boxes can be fitted with separately certified cable glands, breathing and draining devices, and bushings. The devices shall be appropriately Ex e certified and meet the following temperature ranges:

Total maximum power	Minimum concept requirements	Minimum temperature range
Upto 44 W at 40°C ambient Standard MT9 enclosure	Ex e IIC Gb	-20°C to 80°C
Upto 44 W at 50°C ambient Standard MT9 enclosure	Ex e IIC Gb	-20°C to 90°C
Upto 50 W at 40°C ambient Standard MT18 enclosure	Ex e IIC Gb	-20°C to 80°C
Upto 50 W at 50°C ambient Standard MT18 enclosure	Ex e IIC Gb	-20°C to 90°C
More than 50W Standard MT18 enclosure	Ex e IIC Gb	Refer to manufacturer -20°C to 100°C

## Certificate Annex



**Certificate Number** CML 13ATEX3011X  
**Equipment** SX Range I/O Junction Boxes  
**Manufacturer** Abtech Limited

The following documents describe the equipment or component defined in this certificate:

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<b>Drawing No</b>	<b>Sheets</b>	<b>Rev</b>	<b>Approved date</b>	<b>Title</b>
ABT26253	1 of 1	A	14 Nov 2013	SX Excom Certification label
ABT26207	1 of 1	A	14 Nov 2013	SX Excom Certification GA