



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx CML 16.0111X**

Page 1 of 5

Certificate history:

Status: **Current**

Issue No: 4

Issue 3 (2019-08-16)

Issue 2 (2018-03-28)

Issue 1 (2018-03-02)

Issue 0 (2017-05-31)

Date of Issue: 2026-08-11

Applicant: **Abtech Limited**
199 Newhall Road
Lower Don Valley
Sheffield S9 2QJ
United Kingdom

Equipment: **4TJB & SC36JB High Voltage Junction Box**

Optional accessory:

Type of Protection: **Ex sb, Ex op pr, Ex tb**

Marking: 4TJB or SC36JB High Voltage Enclosure
Ex sb IIC/IIB T4 Gb
Ex tb IIIC T135°C Db
Ta= Up to -50°C to +55°C

4TJB Optical Enclosure
Ex * op is IIC/IIB T4 Gb
Ex op is IIIC T70°C/80°C Db
Ta= Up to -50°C to +55°C

4TJB Optical Enclosure
Ex * op pr IIC/IIB T4 Gb
Ex op pr IIIC T70°C/80°C Db
Ta= Up to -50°C to +55°C

« * » Where enclosure also has electrical connections, marking will also include Ex eb marking

Note : Protection concept symbols and the minimum/maximum ambient depend on the parts installed. The limits of the ambient range are shown here.

Approved for issue on behalf of the IECEx
Certification Body:

L A Brisk

Position:

Assistant Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

11 Aug 2026

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom





IECEx Certificate of Conformity

Certificate No.: **IECEx CML 16.0111X**

Page 2 of 5

Date of issue: 2026-08-11

Issue No: 4

Manufacturer: **Abtech Limited**
199 Newhall Road
Lower Don Valley
Sheffield S9 2QJ
United Kingdom

Manufacturing
locations: **Abtech Limited**
199 Newhall Road
Lower Don Valley
Sheffield S9 2QJ
United Kingdom

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition: 7.0

IEC 60079-28:2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition: 2

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition: 2

IEC 60079-33:2012 Explosive atmospheres – Part 33: Equipment protection by special protection "s"
Edition: 1.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/CML/ExTR16.0114/00
GB/CML/ExTR26.0045/00

GB/CML/ExTR18.0062/00

GB/CML/ExTR18.0076/00

Quality Assessment Report:

GB/CML/QAR16.0021/13



IECEx Certificate of Conformity

Certificate No.: **IECEx CML 16.0111X**

Page 3 of 5

Date of issue: 2026-08-11

Issue No: 4

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The 4TJB and SC36JB Junction Boxes are high voltage 3 Phase junction boxes, which are rated up to a maximum of 45kV and 346W, depending on variant and the ambient temperature.

See Annex for full description and Conditions of Manufacture

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Annex for Specific Conditions of Use



IECEx Certificate of Conformity

Certificate No.: **IECEx CML 16.0111X**

Page 4 of 5

Date of issue: 2026-08-11

Issue No: 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1

This issue introduced the following changes:

1. To recognise clarifications in the documentation with regards to the enclosure sizes and types of connection facilities that are permitted.

Issue 2

This issue introduced the following changes:

1. To allow a description change to reflect the clarification modification listed in Issue 1 above.

Issue 3:

This issue introduced the following changes:

1. To update QAR reference only.

Issue 4:

This issue introduced the following changes:

1. To introduce new Ex parts to the scope of this equipment,
2. The introduction of a 36kV model to the certificates,
3. To update to the latest standards,
4. To clarify and correct the conditions of manufacture.



IECEx Certificate of Conformity

Certificate No.: **IECEx CML 16.0111X**

Page 5 of 5

Date of issue: 2026-08-11

Issue No: 4

Additional information:

IEC 60079-7:2017 Ed. 5.1 (Reference only)

Annex:

[Certificate Annex IECEx CML 16.0111X Issue 4.pdf](#)

Annexe to: IECEx CML 16.0111X Issue 4
Apparatus: 4TJB & SC36JB High Voltage Junction Box
Applicant: Abtech Limited



Description

The 4TJB and SC36JB Junction Boxes are high voltage 3 Phase junction boxes, which are rated up to a maximum of 45kV and 346W, depending on variant and the ambient temperature.

Table 1 – Ratings for High Voltage Enclosure					
Junction box reference	Ambient temperature range (°C)	Maximum Voltage rating (V)	Maximum Current rating (A)	Maximum Power Dissipation (Watts)	Temperature class
4TJB	-50°C to +40°C	45kV	980A	346W	T4 / T135°C
4TJB	-50°C to +55°C	45kV	882A	288W	T4 / T135°C
SC36JB	-50°C to +40°C	36kV	1250A	346W	T4 / T135°C
SC36JB	-50°C to +55°C	36kV	1250A	288W	T4 / T135°C
Table 2 – Optical Power					
'op pr' applications			'op is' applications		
T4/T70°C at a maximum ambient of $\leq 40^{\circ}\text{C}$ T4/T80°C at a maximum ambient of $\leq 55^{\circ}\text{C}$			T4/T70°C at a maximum ambient of $\leq 40^{\circ}\text{C}$ T4/T80°C at a maximum ambient of $\leq 55^{\circ}\text{C}$		
When 'op pr' is used with or without terminals, the splice case is limited to 100mW and a -40°C to 55°C ambient temperature.			When 'op is' is used with or without terminals. Fibre optic source is limited to a maximum irradiance of 5 mW/mm ² (surface area not exceeding 400mm ²) Signal power is limited to 35 mW@T4.		

The 4TJB and SC36JB Junction Boxes use the Abtech Ltd, SX enclosures, which are component approved IECEx CML 15.0039U and marked Ex eb IIC Gb / Ex tb IIIC Db. Typical minimum dimensions are 1300x1500x500mm (4TJB) & 1250x1250x1000mm (SC36JB), but may be up to 2000mm x 2000mm x 500mm.

For the 4TJB there are three bus bars available, one per phase, each providing connections for either two, three or four conductors per phase. Each bus bar is supported by two insulators and each phase is separated by an insulated base and cover partitions, as well as partitions on both sides to ensure adequate creepage and clearance distances are met.

The terminals can be sized either M10 or M20, the manufacturer supplies the cable lugs for use by the end user. The cable lugs are not part of this approval.

For the SC36JB there are 1 or 2 separate enclosure compartments, one, or one front and one rear with a divider between fitted with up to 4 Type C equipment hanger or bushings and up to 4 separable couplers per phase in each compartment for a total of 32 couplers. Each phase is separated by partitions between phases and side, top and divider barrier providing adequate creepage and clearance distances.



Certificate Annex IECEx
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK



The Junction Boxes can be supplied with appropriately Ex certified IECEx anti-condensation heater, thermostat, hygrostat, gas sensor, MCB, RCBO, indicator lamps, power supply isolator switch as required.

Both types consist of a main HV enclosure as above but additionally includes the option of a separate signal enclosure fitted to the side, covered under IECEx CML 14.0047X.

Ex auxiliary equipment intended to be installed with the Ex Equipment:

Part Type	Manufacturer	Model/Type	Certificate No.	Ex Marking String
Switch Modules	CZ Explosion-Proof Appliances Co. Ltd	CZ0201	IECEX CML 19.0053U	Ex db eb IIC Gb
Signal Lamp Module	CZ Explosion-Proof Appliances Co. Ltd	CZ0202	IECEX CML 19.0052U	Ex db eb IIC Gb
Controle Module	CZ Explosion-Proof Appliances Co. Ltd	CZ0203	IECEX CQM 11.0033U	Ex db eb IIC Gb
MCB/RCBO	CZ Explosion-Proof Appliances Co. Ltd	CZ0511	IECEX CML 19.0057U	Ex db eb IIC Gb Ex db eb IIB Gb
Window and control devices for MCB/RCBO	CZ Explosion-Proof Appliances Co. Ltd	CZ8000	IECEX CML 17.0042U	Ex eb IIC Gb Ex tb IIIC Db
Empty Enclosure	Abtech Limited	SX Range of Empty Enclosures	IECEX CML 15.0039U	Ex eb IIB/IIC Gb or Ex ia IIB/IIC Ga or Ex ib IIB/IIC Gb or Ex ta IIIC Da or Ex tb IIIC Gb or Ex ec IIC Gc or Ex nR IIC Gc
Explosion protected electrical sensor	Schischek GmbH	ExBin-...	IECEX EPS 14.0074X	Ex e mb [ia Ga] IIC T6...T4 Gb Ex tb [ia Da] III C T80°C...T130°C Db IP66
Gas Detector	Crowcon Detection Instruments Ltd.	XGard Bright	IECEX TUR 16.0035X	Ex db IIC T6 Gb Ex tb IIIC T80°C Db Ex db IIC T4/T3 Gb Ex tb IIIC T80°C Db
Control and signal device actuators	BARTEC GmbH	07-3400-****/****	IECEX CML 21.0128U	Ex eb IIC Gb Ex tb IIIC Db
Switch modules, Illuminated indicator and push button modules, potentiometer module	BARTEC GmbH	07-33**	IECEX CML 22.0014U	Ex db eb I Mb, Ex db eb IIC Gb Ex db ia I Mb, Ex db ia IIC Gb
Switch module	Quintex GmbH	QX0201	IECEX EPS 11.0011U	Ex db eb IIC Gb Ex tb IIIC Db
Signal lamp module	Quintex GmbH	QX0202	IECEX EPS 11.0012U	Ex db eb IIC Gb Ex tb IIIC Db
Mini-thermostat	Quintex GmbH	IRM**/**	IECEX EPS 20.0003X	Ex mb IIC T4 Gb Ex tb IIIC T100°C Db



Certificate Annex IECEx
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK

Conditions of Manufacture

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

- i. The products covered by this certificate incorporate separately certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices. The manufacturer shall inform CML of any modifications of the devices that may impinge upon the explosion safety of their design.

In addition, this certificate relies on the following previously certified products. When the Junction Box 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 No.	Key Attributes
Anti-Condensation heater fitted with a thermostat	As appropriate	Suitably certified by a notified/certification body as a piece of equipment Ex eb, with a T6 temperature class and suitable for the exposed ambient temperature. The integral thermostat of the incorporated heater shall have a limiting temperature set to no higher than 10°C below the maximum upper ambient temperature marked on the enclosure (e.g. 30°C for Tamb +40°C, 45°C for Tamb +55°C). Appropriate creepage and clearances are still maintained

- ii. If the terminals are fitted with cables/wiring by the manufacturer; then a routine dielectric strength test shall be carried out on each unit in accordance with IEC 60079-7:2017, clause 7.1.
The test voltage shall be determined on the basis of the marked maximum rated voltage, with the appropriate safety factor and test duration applied in accordance with IEC 60079-7:2017, clause 6.1.
No flashover or breakdown shall occur.
- iii. When the equipment is marked for 'op pr' the extreme ambient temperature limit marking that can be applied is -40°C to +55°C.
- iv. Junction Boxes that are marked with the ambient range -50°C to +55°C shall only be constructed using an SX component enclosure with a minimum depth of 300 mm, without windows and fitted with silicone gaskets, as approved by IECEx CML15.0039U.
- v. The maximum Power of the equipment is dependent on the ambient and current rating. The maximum ambient, power and voltage ratings shall be marked in accordance with the Description on this certificate and with the approved drawings listed on this certificate.
- vi. When fitted with the Gas Detector, model XGard Bright, the following conditions must be met :
 - a. Unused cable entries must be sealed using an IECEx Ex db and Ex tb certified stopping plug with minimum IP65/IP66 ingress protection.
 - b. Only the cables/wires which are specified in the user manual can be used.
 - c. External earthing should be considered and installed according to user manual before use.
- vii. When the equipment is fitted with the Control and signal device actuators type 07-3400-****/**** the following additional warning should be applied "WARNING – CLEAN ONLY WITH A DAMP CLOTH".



Certificate Annex IECEx
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK

- viii. When fitted with the following components : CZ0201-***L, CZ0303-***L, CZ0203-***/*L, QX-0201 type L, QX-0202-**L and CZ0511 (IIB) the minimum ambient temperature limit marked on the equipment should be -40°C.
- ix. When fitted with the QX-0202-**2L, QX-0202-**2H and CZ8000 (all models except terminals and busbars), the maximum ambient temperature limit marked on the equipment should be +50°C.
- x. When fitted with the 07-3400-****/**** and 07-33*4-4***/****, the maximum ambient temperature limit marked on the equipment should be +40°C.
- xi. When fitted with the CZ0511 (IIC) the minimum ambient temperature limit marked on the equipment should be -20°C.
- xii. The installation of the specific models CZ8000-1200 and CZ8000-1300 with foam PU seal are forbidden on this equipment.

Specific Conditions of Use

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

- i. For junction boxes used at voltages over 11kV (Zone 1) or 15kV (Zone 2) and installed in a location where an explosive atmosphere is considered present under normal operation or fault conditions (Zones either 1, 2, 21 or 22), the installer/user shall take into account any additional risks the location/environmental conditions and installation may pose to electrical breakdown or corona discharge, such as moisture/condensation and contaminants (dust, oils/greases, etc). Additionally, the installer shall consider the cables installed to ensure they do not increase any ignition risks, (materials, size and secureness of connections, it is additionally considered that the high voltage cables should be armoured and screened, as well as used with appropriate connection sleeves) Although above points should be adhered to, a responsible site engineer shall be consulted to address these risks within each installation application.
- ii. When fitted with high voltage (45 kV maximum working voltage) terminals, the maximum dissipated power of the Junction Boxes shall be calculated in accordance with IEC 60079-7:2017, Annex E.2, and shall not exceed the maximum power rating defined in the Description on this certificate.
- iii. An electric strength test shall be carried out on the 4TJB and SC36JB Junction Boxes after it has been installed. The test shall be carried out at a value of 73kVac (SC36JB) or 91kVac (4TJB) r.m.s. in accordance with IEC 60079-7:2017, clause 7.1. This voltage may be reduced as appropriate for marked lower working voltages. Optionally the test may be performed using d.c. voltage at 140% of the specified a.c., r.m.s. test voltage in accordance with IEC 60079-7:2017, clause 6.1.
- iv. Moisture and condensation may reduce the effectiveness of the creepage distances, to reduce the risk, the environmental conditions during installation and maintenance activities shall be observed. The enclosure shall only be opened when the local ambient temperature is between 5°C and 40°C with a maximum relative humidity of 80% to temperatures up to 31°C, decreasing linearly to 50% at 40°C.



Certificate Annex IECEX
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK

- vi. The following minimum creepage and clearance distances shall be maintained:

Model (Voltage)	Location	Creepage (mm)	Clearance (mm)
4TJB (45kV)	Phase to phase	828	534
	Phase to earth	564	454
SC36JB (36kV)	Phase to phase	445	370
	Phase to earth	265	220

- vii. When the separate optical signal enclosure is marked 'Ex op is', the fibre optic source supplying this equipment shall be suitably certified as compliant with at least IEC 60079-28:2015 or later and provide an inherently safe optical source (op is), EPL Gb, subsequently the parameters in Table 2 in the description apply. Additionally, the optical supply shall provide over-power fault protection suitable for an ELP level 'Gb'.
- viii. When the separate optical signal enclosure is marked 'Ex eb op pr', the fibre ST connectors contained within the optical enclosure must not be separated whilst energised if an explosive atmosphere may be present.
- ix. When Anti-condensation heaters and thermostats are fitted, the user/installer shall ensure the local ambient inside the junction box does not exceed the upper ambient temperature limit.
- x. The 4TJB & SC36JB High Voltage Junction Boxes shall be installed in accordance with manufacturer's instructions document IOM0013.
- xi. When fitted with the Mini-thermostat type IRM**/**, the final user must ensure that the circuit of the mini-thermostat is protected by a circuit breaker with tripping characteristic C to the rated current of 16A.
- xii. Where the equipment is fitted with the explosion-protected electrical sensor type ExBin-... and/or the CZ0202 Series Explosion-proof Signal Lamp Modules, the intrinsically safe function shall be rendered inoperative. Under this configuration, the intrinsically safe circuit(s) shall not be used, connected, or made available for operation, as the requirements for intrinsic safety protection are not ensured when this sensor type is installed."
- xiii. The flameproof joints incorporated within the certified Ex-component modules (e.g. CZ0201 Switch Modules, CZ0202 Signal Lamp Modules...) are not permitted to be repaired. If damage to a flameproof joint is identified, the component shall be replaced.

Components used which are covered by Ex Certificates issued to older editions of Standards

Certificate number	Standards (incl Ed)	Assessment result
IECEX CQM 11.0033U	IEC 60079-0 Ed. 6.0	Technical differences considered and found satisfactory.
	IEC 60079-1 Ed. 7.0	
	IEC 60079-7 Ed. 5.0	



Certificate Annex IECEX
Version: 12.0 Approval: Approved



Eurofins E&E CML Limited
Newport Business Park, New Port Road
Ellesmere Port, CH65 4LZ, UK