



# 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](http://www.iecex.com)

Certificate No.: **IECEX CML 20.0062X** Page 1 of 4 [Certificate history:](#)  
Issue 0 (2020-06-05)

Status: **Current** Issue No: 1

Date of Issue: 2022-05-04

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

Equipment: **Bus Bar Junction Box**

Optional accessory:

Type of Protection: **Increased Safety "eb", Dust Enclosure "tb"**

Marking: Ex eb IIC T\* Gb (-40°C to +\*°C)  
Ex tb IIIC T\*°C Db (-40°C to +\*°C)

\* These values depend on the specific application of the product. For full details refer to the Certificate Annex.

Approved for issue on behalf of the IECEx  
Certification Body:

**A Snowdon**

Position:

**Certification Manager**

Signature:  
(for printed version)

Date:  
(for printed version)

2022-05-04

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Certificate issued by:

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





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locations: **Abtech Limited**  
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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 60079-31:2013](#) Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

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/ExTR20.0073/00](#)

[GB/CML/ExTR22.0071/00](#)

Quality Assessment Report:

[GB/CML/QAR16.0021/07](#)



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**EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Increased Safety BusBar Box enclosure comprises an enclosure of 316L (EN1.4404) stainless steel of minimum thickness 2mm, with minimum external dimensions 770mm wide by 770mm deep by 675mm high, maximum size 1250mm wide x 770mm deep x 1250mm high, in normal orientation, manufactured in accordance with the SX Range manufacturing specification detailed in certificate CML15ATEX3078U and IECEx CML 15.0039U.

**Refer to Certificate Annex for full description and Conditions of Manufacture.**

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

Refer to Certificate Annex



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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**  
**Issue 1**

Refer to Certificate Annex for changes under this issue.

**Annex:**

[IECEX CML 20.0062X Issue 1 Certificate Annex.pdf](#)

**Annexe to:** IECEx CML 20.0062X Issue 1  
**Applicant:** Abtech Ltd  
**Apparatus:** Bus Bar Junction Box



## Description

The Increased Safety BusBar Box enclosure comprises an enclosure of 316L (EN1.4404) stainless steel of minimum thickness 2mm, with minimum external dimensions 770mm wide by 770mm deep by 675mm high, maximum size 1250mm wide x 770mm deep x 1250mm high, in normal orientation, manufactured in accordance with the SX Range manufacturing specification detailed in certificate CML15ATEX3078U and IECEx CML 15.0039U.

The enclosure provides openings located on three of its faces. One of these openings is the front aperture covered by the removable hinged lid. The lid is secured in position with a minimum of eight slotted or slotted/hexagonal captive screws, seven M6 x 20mm each locating into M6 cage nuts, and one M6 x 30mm locating into a tank bush. Lid sealing is provided by an adhesive backed closed cell silicone rubber strip or single piece, or solid silicone rubber in strip form or single piece.

Two of the faces which are adjacent to the lid are each provided with two removable gland plates of minimum thickness 5mm, either of 316L (EN1.4404) stainless steel or CZ112 brass. Each are secured using a minimum of eighteen M8 hexagonal headed screws of minimum length 16mm into M8 welded tank bushes. Sealing is provided by closed cell silicone rubber strip or single piece, or solid silicone rubber in strip form or single piece.

An external/internal earth stud on minimum thread size M10 and minimum length 40mm is provided either on the side face which supports the lid hinge, or the opposite face, or both. Anti-loosening facility is provided by appropriately sized spring washers and plain washers.

Inside the enclosure are four copper bars of width 100mm (4") nominal, minimum thickness 10mm, maximum thickness 40mm, each secured in places with two removable collars of insulating material, themselves secured to the insulating bus bar support inserts using M3 socket head screws. The bus bars are designed to be drilled to the user's requirements for the securing of cable lugs crimped to the incoming cable conductors. The cable lug securing bolt, minimum size M10, maximum size M20, passes through the bus bar and is secured on the other side using a nut. The bus bars are supported using a frame of insulating material manufactured by Glastic® UTR Laminate, part No.1494.

The BusBar Box product has a maximum operating voltage of 11kV. The maximum operating current is dependent on bus bar thickness and cable conductor size, with due consideration of the required T rating and maximum ambient temperature of the intended location. The maximum permitted power dissipation is detailed in Table 1 below and applications are verified using Table 2 and client provided cable data or BS 60228.

**Table 1:**

| Box                          | Type 1 | Type 2 | Type 3 | Type 4 | Type 5 | Type 6 |
|------------------------------|--------|--------|--------|--------|--------|--------|
| Height (m)                   | 0.675  | 1.250  | 0.675  | 1.250  | 0.675  | 1.250  |
| Width (m)                    | 0.770  | 0.770  | 1.000  | 1.000  | 1.250  | 1.250  |
| Depth (m)                    | 0.770  | 0.770  | 0.770  | 0.770  | 0.770  | 0.770  |
| Maximum Dissipated Power (W) | 245    | 377    | 294    | 448    | 350    | 524    |

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**Table 2**

| Standard mm Busbar Size (A x B) | Permitted US equivalent thickness | Maximum Current $\Delta T$ 30K | Maximum Current $\Delta T$ 40K | Maximum Current $\Delta T$ 50K | Maximum Current $\Delta T$ 60K | Maximum Current $\Delta T$ 70K | Maximum Current $\Delta T$ 80K |
|---------------------------------|-----------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| 100 x 10                        | 1/2"                              | 1440                           | 1700                           | 1930                           | 2160                           | 2370                           | 2550                           |
| 100 x 15                        | 5/8"                              | 1720                           | 2040                           | 2320                           | 2590                           | 2840                           | 3060                           |
| 100 x 20                        | 1"                                | 1950                           | 2300                           | 2620                           | 2930                           | 3210                           | 3460                           |
| 100 x 25                        | 1"                                | 2130                           | 2520                           | 2870                           | 3200                           | 3490                           | 3790                           |
| 100 x 30                        | 1 1/4"                            | 2280                           | 2700                           | 3070                           | 3430                           | 3740                           | 4030                           |
| 100 x 40                        |                                   | 2500                           | 2960                           | 3370                           | 3760                           | 4100                           | 4430                           |
| T Class                         |                                   | T6                             | T6                             | T5                             | T4                             | T4                             | T4                             |
| Temperature for Dust            |                                   | T70°C                          | T80°C                          | T90°C                          | T100°C                         | T110°C                         | T120°C                         |

**Issue 1**

This issue introduces the following modifications:

- i. To determine the power dissipation in the existing larger enclosures.
- ii. To permit a change to the collar dimensions.
- iii. To permit a change to the label to support UKEX certification.

**Conditions of Manufacture**

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

- i. Any anti-condensation heater certified under IECEx to IEC 60079-7:2006 or later, with a Temperature Class to match that of the enclosure, and a thermostat set to a maximum of +30°C, may be fitted to the face opposite the lid.
- ii. An electric strength test shall be carried out only when the terminals are fitted with cable. This test shall be carried out according to EN 60079-7, clause 7.1.

**Specific Conditions of Use**

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

- i. Cable entry points may reach up to 46°C above marked ambient, therefore correctly rated cables shall be selected; refer to user's instructions manual.

### Components covered by Ex Certificates issued to older editions of Standards

| Certificate number | Standards (Incl. Ed)   | Assessment result  |
|--------------------|--|--|
| IECEX CML 15.0039U | IEC 60079-0 6 <sup>th</sup> Edition<br>IEC 60079-11 6 <sup>th</sup> Edition<br>IEC 60079-31 2 <sup>nd</sup> Edition<br>IEC 60079-7 5 <sup>th</sup> Edition | No applicable technical differences<br><br>Technical differences evaluated and found satisfactory. For detail see ExTR |