



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx EXV 15.0007X

Issue No: 1

Certificate history:

Issue No. 1 (2017-11-11)

Issue No. 0 (2016-03-11)

Status: **Current**

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Date of Issue: **2017-11-11**

Applicant: **Extronics Ltd.**  
1 Dalton Way  
Midpoint 18  
Middlewich  
Cheshire  
CW10 0HU  
**United Kingdom**

Equipment: **Range of Increased Safety Battery Enclosures - Type IBATT5xx**

*Optional accessory:*

Type of Protection: **Increased Safety "e"**

Marking:  
Ex e IIC T6 Gb -40°C ≤ T<sub>amb</sub> ≤ +55°C

*Approved for issue on behalf of the IECEx  
Certification Body:*

Sean Clarke

*Position:*

Certification Manager

*Signature:  
(for printed version)*

*Date:*

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

**ExVeritas Limited**  
Units 16-18 Abenbury Way  
Wrexham Ind. Est.  
Wrexham LL 139UZ  
United Kingdom





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Manufacturer: **Extronics Ltd.**  
1 Dalton Way  
Midpoint 18  
Middlewich  
Cheshire  
CW10 0HU  
**United Kingdom**

Additional Manufacturing location(s):

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 electrical apparatus 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 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-7 : 2006-07** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:4

*This Certificate **does not** indicate compliance with electrical 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 Report:

[GB/EXV/ExTR15.0007/00](#)

Quality Assessment Report:

[GB/SIR/QAR08.0025/06](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The iBAT5xx is a range of an increased safety battery enclosures which are constructed from either mild or stainless steel, the design comprises of a main enclosure and vented lid.

The maximum size box can be populated with 36 cells with capacities up to 2500 Ah.

The permitted cell types are lead-acid, nickel-iron and nickel-cadmium that are constructed to comply with the relevant IEC standards as per the requirements of Table 11 of EN 60079-0:2012 for secondary cells.

The option to fit the battery box with a suitably certified temperature sensor is included.

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

See Annex

In addition to those conditions shown in the annex issue 1 includes the following:

1. When the cell terminals are encapsulated the encapsulant material used shall be suitable for a maximum service temperature of 85°C. The terminals shall be fully encapsulated to ensure there are no bare electrical conductors.
2. When the battery box is fitted with external heating then the method shall be suitable approved for the area classification.
3. The battery box may be fitted with up to two temperature probes.



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

The changes are as follows:

1. The option to fit an additional temperature probe.
2. An increase in the ingress protection rating to IP56 when the battery terminal posts are encapsulated to prevent ingress.
3. The option to fit external heating (trace heat tape etc) to the battery box.

**Annex:**

[IECEX EXV15.0007X Certificate Annex.pdf](#)

**Routine Tests:**

1. IEC 60079-7 clause 7.2 - Dielectric test for batteries. The insulation resistance of a battery is considered satisfactory if the resistance is at least 1 M $\Omega$  when tested in accordance with clause 6.6.2.
2. IEC 60079-7 clause 6.6.2 tests -Test conditions are as follows:
  - The measuring voltage of the ohmmeter shall be at least 100 V;
  - All connections between the battery and the external circuits and, where fitted, the battery container shall be disconnected.
  - The cells shall be filled with electrolyte up to the maximum permissible level.

**Conditions of manufacture:**

1. The maximum cell capacity permitted is 2500Ah.
2. The permitted cell types are lead-acid, nickel-iron and nickel-cadmium that are constructed to comply with the relevant IEC standards as per the requirements of Table 12 of EN 60079-0:2012 for secondary cells.
3. The cells used to form the battery shall only be connected in series.
4. The battery shall be made from cells of the same type and from the same manufacturer.
5. The cells shall be operated within the allowable limits of the cell manufacturer.
6. To prevent faults from the charging devices causing over voltage or over current of the cells voltage regulation and current limitation (fuses) will be provided between the charger and the cells.
7. The optional temperature probe if fitted shall be suitability IECEx approved apparatus and the electrical connections shall be external to the battery box.
8. Ex e glands use shall be IECEx approved.
9. The cell interconnecting conductor sizing shall be in accordance with IEC 60364-5-52: 2009 Edition 3.0 and IEC 60079-14: 2013 with reference to the maximum ambient temperature of + 55°C the conductor not to exceed 70°C at the conductor branching point.
10. The height of the battery enclosure can be reduced by up to 15% provided the lid ventilation is increased by the same percentage.

**Specific Conditions of Use:**

1. Refer to the installation and operating manual for cell charging conditions.
2. The battery box shall not be exposed to mechanical shock.
3. If the battery is to be disconnected from its associated equipment in the hazardous area then a suitably approved disconnection device shall be used.

**Manufacturer's documents:**

Title:	Drawing No.:	Rev. Level:	Date:
CD IBATT 5XX CERTIFICATION DRAWING	407061	2.0	2016.02.25
CD IBATT 5XX ELECTROSTATIC WARNING LABEL DRAWING	415614	1.0	2016.02.25
iBATT5xx MANUAL	409286	1.1	2016.02.16
CD IBATT 5XX ATEX/IECEx CERTIFICATION LABEL DRAWING	409285	2.0	2016.02.25