



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

Certificate No.: IECEx TRC 14.0025X Issue No: 1 Certificate history:
Status: **Current** Page 1 of 4 [Issue No. 1 \(2016-07-26\)](#)
Date of Issue: **2016-07-26** [Issue No. 0 \(2015-02-25\)](#)
Applicant: **JCE Group (UK) Ltd.**
Blackburn Business Park,
Aberdeen,
AB21 0PS
United Kingdom
Equipment: **Battery Enclosure BC1, BC1A, BC2, BC2A, BC2B, BC3, BC3A, BC4, BC4A
& BC10**
Optional accessory:
Type of Protection: **Increased Safety**
Marking: Ex e IIC T6 Gb

Approved for issue on behalf of the IECEx
Certification Body:

Stephen Winsor

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](#).

Certificate issued by:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire
WN8 9PN





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Manufacturer: **JCE Group (UK) Ltd.**
Blackburn Business Park,
Aberdeen,
AB21 0PS
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/TRC/ExTR14.0024/00](#) [GB/TRC/ExTR14.0024/01](#)

Quality Assessment Report:

[GB/ITS/QAR11.0014/02](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The BC Battery enclosure range consists of battery housing units of various dimensions manufactured from 2mm 316L Stainless Steel. The housing units are comprised of a body and lid. The lid is secured via 4 x M6 stainless steel studs welded to the enclosure and a nut, washer and spring washer arrangement. The enclosure is provided with a 30mm earth boss and M8 stainless steel earth stud welded to the enclosure body. Earthing connection is made via double insulated ring crimp earth conductor retained via a nut and spring washer arrangement.

Internally Sonnenschein A512/###A VRLA batteries are housed and connected in series via 10mm²/16mm²/25mm² double insulated cable (dependent on model). There may be one or two 12V batteries housed within the enclosure rated from 25Ah to 200Ah depending on model type. Battery terminals are connected by the manufacturer via ring lugs crimped onto the conductor. The lugs are attached to the battery terminals via an M5 bolt, nut and spring washer arrangement to a 5Nm torque the terminal and conductors are encapsulated. The enclosure internals are lined with 2mm Tufnol or PVC fixed to the internal walls with silicone adhesive. The equipment is provided with +ve and -ve cable tails which are fed into the enclosure through suitably approved Ex cable glands provided by the manufacturer. The cables and batteries are retained in position via battery retaining clamp bars and cable clamps located on retaining clamp bars.

The battery enclosures are provided with 2 x 10mm drain holes on the base of the enclosure. Ventilation of the enclosure is provided by openings located between the overhanging enclosure lid and enclosure base. Provided for drainage, prevention of pressurisation and prevention of H2 concentration build up.

Charging the batteries in the hazardous area is permitted only when the equipment is connected to compliant battery chargers located in a safe area, type SBCEP-1536 for 12V batteries and type SBCEP-1537 for 24V batteries, incorporating an overcharge protection pcb, in combination with circuit breaker and under voltage trip.

Where the external charger is not supplied by manufacturer, the equipment is marked with a warning label, the battery shall not be charged in a hazardous area.

CONDITIONS OF CERTIFICATION: YES as shown below:

1. Only suitably rated IECEx certified Cable glands, blanking elements and thread adapters are to be used in conjunction with the equipment.
2. Equipment must not be installed in locations where it may be susceptible to impacts or excessive vibration.
3. Field wiring external to the battery enclosure shall be terminated by means of a type protection listed in IEC 60079-0 or in a safe area.
4. The BC Battery Enclosure shall be connected to interconnected equipment via suitably rated Ex type battery isolator.
5. Interconnected equipment shall limit discharge current to maximum 20A via a suitably rated safety device.



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

Addition of nine Models BC1, BC1A, BC2, BC2A, BC2B, BC3, BC3A, BC4, BC4. Allowance for the batteries within the enclosures to be charged in the hazardous area when connected to an approved charger. Removal of restriction on outdoor use.

Annex:

[Annex to IECEx TRC 14.0025X issue 1.pdf](#)



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 Unit 1, Pendle Place,
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 United Kingdom

Annex to IECEx Certificate of Conformity

IECEx TRC 14.0025X issue No.:1

Routine Tests:
<ol style="list-style-type: none"> 1. The equipment shall be subjected to a dielectric strength test of 500Vrms. The voltage shall be applied firstly between the positive cable and enclosure body followed by the negative cable and the enclosure body. The voltage is to be applied for at least 60 seconds, no breakdown shall occur. Alternatively 1.2 times the test voltage may be applied for a period of 100ms. 2. The battery shall be subjected to the test of insulation resistance and is considered satisfactory if the resistance is at least 1 MΩ when tested in accordance with 6.6.2.

Model range

Model	Voltage	U_{max}	I_{max}	Rating
BC1	12VDC	13.8V	20A	65Ah
BC1A	12VDC	13.8V	20A	120Ah
BC2	24VDC	27.6V	20A	65Ah
BC2A	24VDC	27.6V	20A	120Ah
BC2B	12VDC	13.8V	20A	85Ah
BC3	12VDC	13.8V	20A	140Ah
BC3A	12VDC	13.8V	20A	200Ah
BC4	24VDC	27.6V	20A	140Ah
BC4A	24VDC	27.6V	20A	200Ah
BC10	24VDC	27.6V	20A	25Ah

Manufacturer's Documents

Title:	Drawing No.:	Rev. Level:	Date:
Zone 1 BC Range of Battery Enclosures Certification Drawing (6 Pages)	BC-002	2	2016-07-19
BC* Range of Battery Enclosures Installation and Maintenance Information (4 Pages)	BC-IM	2	2016-07-19



Enclosure Dimensions

TABLE 1

Battery Type	Voltage	VRLA	Umax	C ₂₀	I _{max} Charge	I _{max} Discharge	Cable Size	Earth Stud	Min. Earth Conductor	Enclosure Fixings	Cover Screw Tightening.
BC-1	12VDC	1	13.8VDC	65Ah	65A	20A	16mm ²	M8	16mm ²	4 x M8	11Nm.
BC-2	24VDC	2	27.6VDC	65Ah	65A	20A	16mm ²	M8	16mm ²	4 x M8	11Nm.
BC-1A	12VDC	1	13.8VDC	120Ah	120A	20A	25mm ²	M10	25mm ²	6 x M10	11Nm.
BC-2A	24VDC	2	27.6VDC	120Ah	120A	20A	25mm ²	M10	25mm ²	6 x M10	11Nm.
BC-2B	12VDC	1	13.8VDC	85Ah	85A	20A	16mm ²	M10	16mm ²	6 x M10	11Nm.
BC-3	12VDC	1	13.8VDC	140Ah	140A	20A	25mm ²	M10	25mm ²	6 x M10	11Nm.
BC-4	24VDC	2	27.6VDC	140Ah	140A	20A	25mm ²	M10	25mm ²	6 x M10	11Nm.
BC-3A	12VDC	1	13.8VDC	200Ah	200A	20A	35mm ²	M10	25mm ²	6 x M10	11Nm.
BC-4A	24VDC	2	27.6VDC	200Ah	200A	20A	35mm ²	M10	35mm ²	6 x M10	11Nm.
BC-10	24VDC	2	27.6VDC	25Ah	20A	20A	10mm ²	M8	10mm ²	4 x M8	11Nm.

TABLE 2

Battery Type	Voltage	A1	A2	B1	B2	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	E1	WEIGHT
BC-1	12VDC	445	405	374	364	363	330	15	20	435	440	/	240	11	1xø10	M8	45.0KG
BC-2	24VDC	445	405	374	364	503	470	15	20	435	440	/	240	11	1xø10	M8	70.0KG
BC-1A	12VDC	587	537	310	260	500	470	20	25	288	310	200	400	14	2xø10	M10	68.0KG
BC-2A	24VDC	587	537	500	450	540	510	20	25	478	500	200	400	14	2xø10	M10	133.0KG
BC-2B	12VDC	435	395	440	400	426	383	20	25	395	440	150	300	14	1xø10	M10	62.0KG
BC-3	12VDC	587	537	348	298	505	475	20	25	326	348	200	400	14	2xø10	M10	74.0KG
BC-4	24VDC	587	537	568	518	545	515	20	25	546	568	200	400	14	2xø10	M10	140.0KG
BC-3A	12VDC	590	540	395	344	586	556	20	25	373	395	250	500	14	2xø10	M10	102.0KG
BC-4A	24VDC	590	540	670	620	626	596	20	25	598	620	250	500	14	2xø10	M10	183.0KG
BC-10	24VDC	450	410	280	250	303	270	15	20	440	460	/	130	11	1xø10	M8	39.0KG

All dimensions in millimeters