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 TRC 14.0025X**

Page 1 of 4

Certificate history:
Issue 1 (2016-07-26)
Issue 0 (2015-02-25)

Status: **Current**

Issue No: 2

Date of Issue: 2022-10-20

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 Ex "eb"**

Marking: Ex eb IIC T6/T5 Gb

-20 °C ≤ Ta ≤ +40 °C T6
-20 °C ≤ Ta ≤ +50 °C T5

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

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

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:

Element Materials Technology
Unit 1 Pendle Place
Skelmersdale
West Lancashire

IECEx Certificate of Conformity

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Manufacturer: **JCE Group (UK) Ltd.**
Blackburn Business Park
Aberdeen
AB21 0PS
United Kingdom

Manufacturing locations:

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 60079-7:2017 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/TRC/ExTR14.0024/00 GB/TRC/ExTR14.0024/01 GB/TRC/ExTR14.0024/02

Quality Assessment Report:

GB/ITS/QAR11.0014/06

IECEx Certificate of Conformity

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 $10mm^2/16mm^2/25mm^2$ 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 SBCP-1536 for 12V batteries and type SBCP-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.

SPECIFIC CONDITIONS OF USE: 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.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Ambient temperature range extended, applied standards updated and marking code changed accordingly.

Annex:

Annex to IECEx Certificate of Conformity IECEx TRC 14.0025X is2.pdf

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

Annex to IECEx Certificate of Conformity IECEx TRC 14.0025X issue No.: 2

"Special conditions for manufacture"

1. Battery terminations are to be tightened to a torque as below:

1.

Model	Terminal	Torque
BC1	A	8 Nm
BC1A	A	8 Nm
BC2	A	8 Nm
BC2A	A	8 Nm
BC2B	A	8 Nm
BC3	A	8 Nm
BC3A	A	8 Nm
BC4	A	8 Nm
BC4A	A	8 Nm
BC10	G-M5	5 Nm

Routine Tests

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	3	2022-09-20
BC* Range of Battery Enclosures Installation and Maintenance Information (5 Pages)	BC-IM	4	2022-09-26

* Denotes information not provided by manufacturer

Attention is drawn to the operating and installation instructions which may contain useful information in relation to conditions of use.

Battery Details

TABLE 1 BATTERY DETAILS

	TYPICAL BATTERY		SPECIFICATION			BATTERY DIMENSIONS				BATTERY			CERT. LABEL DETAIL			CABLE ENTRY	
MODEL	MANUFACTURER	TYPE	VOLT	RATING	QTY	H1	H2	W	L	TERMINAL	TORQUE	WEIGHT	Umax	Imax	VRLA	SIZE	DIA.
BC-1	SONNENSCHEIN	A512/65A	12VDC	65Ah	1	190	190	175	353	A	8Nm	24.4KG	13.8V	65A	1	16mm	20
BC-2			24VDC	65Ah	2							48.8KG	27.6V	65A	2		
BC-1A	SONNENSCHEIN	A512/120A	12VDC	120Ah	1	195	223	189	513	A	8Nm	41.0KG	13.8V	120A	1	25mm	20
BC-2A			24VDC	120Ah	2							82.0KG	27.6V	120A	2		
BC-2B	SONNENSCHEIN	A512/85A	12VDC	85Ah	1	213	236	171	330	A	8Nm	31.0KG	13.8V	85A	1	16mm	20
BC-3	SONNENSCHEIN	A512/140A	12VDC	140Ah	1	195	223	223	513	A	8Nm	48.0KG	13.8V	140A	1	25mm	20
BC-4			24VDC	140Ah	2							96.0KG	27.6V	140A	2		
BC-3A	SONNENSCHEIN	A512/200A	12VDC	200Ah	1	216	242	274	518	A	8Nm	70.0KG	13.8V	200A	1	35mm	20
BC-4A			24VDC	200Ah	2							140KG	27.6V	200A	2		
BC-10	SONNENSCHEIN	A512/25A	24VDC	25Ah	2	126	126	176	167	G-M5	5Nm	19.3KG	27.6V	25A	2	10mm	20

Enclosure Dimensions

TABLE 2 ENCLOSURE DIMENSIONS

MODEL	TYPE	A1	A2	B1	B2	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6	E1	WEIGHT
BC-1	12VDC 65Ah	445	405	415	365	361	330	15	20	395	415		240	11	1 x Ø10	M8	45.0KG
BC-2	24VDC 65Ah	445	405	415	365	501	470	15	20	395	415		240	11	1 x Ø10	M8	70.0KG
BC-1A	12VDC 120Ah	587	537	310	260	506	470	20	25	290	310	200	400	14	2 x Ø10	M10	68.0KG
BC-2A	24VDC 120Ah	587	537	500	450	541	505	20	25	480	500	200	400	14	2 x Ø10	M10	133.0KG
BC-2B	12VDC 85Ah	435	395	440	400	419	383	20	25	430	450	150	300	14	1 x Ø10	M10	62.0KG
BC-3	12VDC 140Ah	587	537	348	298	511	475	20	25	328	348	200	400	14	2 x Ø10	M10	74.0KG
BC-4	24VDC 140Ah	587	537	568	518	551	515	20	25	548	568	200	400	14	2 x Ø10	M10	140.0KG
BC-3A	12VDC 200Ah	590	540	395	344	592	556	20	25	374	394	250	500	14	2 x Ø10	M10	102.0KG
BC-4A	24VDC 200Ah	590	540	670	620	632	596	20	25	650	670	250	500	14	2 x Ø10	M10	183.0KG
BC-10	24VDC 25Ah	450	410	280	250	303	270	15	20	440	460		130	11	1 x Ø10	M8	39.0KG

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