



1 EU - TYPE EXAMINATION CERTIFICATE

2 **Product or Protective System Intended for use in Potentially Explosive Atmospheres**
Directive 2014/34/EU – Annex III

3 EU - Type Examination Certificate No.: **TRAC14ATEX0059X (incorporating variations V1 to V2)**

4 Product: **Battery Enclosure BC1, BC1A, BC2, BC2A, BC2B, BC3, BC3A, BC4, BC4A & BC10**

5 Manufacturer: **JCE Group (UK) Ltd.,**

6 Address: **Blackburn Business Park, Aberdeen, AB21 0PS, United Kingdom**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Element Materials Technology, Notified Body number 2812, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive. The examination and test results are recorded in the confidential reports **TRA-025747-33-00A & TRA-025747-33-02A.**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013 EN 60079-7:2007

Except in respect of those requirements listed at section 18 of the schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of this product shall include the following:

II 2 G Ex e IIC T6 Gb

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.

S P Winsor, Certification Manager

Issue date: 2019-11-01

Page 1 of 7

CSF355—NL 1.0

13 SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

14 CERTIFICATE NUMBER TRAC14ATEX0059X (incorporating variations V1 to V2)

15 Description of Product

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 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.

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

16 Test report No. (associated with this certificate issue): N/A.

SCHEDULE TO EU - TYPE EXAMINATION CERTIFICATE

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17 Specific Conditions of Use

1. Only suitably rated ATEX 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.

18 Essential Health and Safety Requirements (Directive Annex II)

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

<u>Clause</u>	<u>Subject</u>
None	None

19 Drawings and Documents

The list of controlled manufacturer's drawings and documents is given in Appendix A to this schedule.

20 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.

21 Specific Conditions for Manufacture

None.

22 Photographs



Three sizes small, medium and large, BC10, BC2B and BC4A

23 Details of Markings

JCE GROUP (UK) LTD			
ABERDEEN UK			
CE 2575 Ex II 2 G			
TRAC14ATEX0059X			
IECEX TRC 14.0025X			
Ex e IIC T6 Gb			IP23
U _{max}	*****	I _{max}	***
BC**	S/N		20

NOMINAL BATTERY VOLTAGE

NO. OF BATTERIES IN SERIES

ZONE 1
HAZARDOUS AREA
BATTERY ENCLOSURE
**V **Ah
* x 12V **Ah
VRLA 20Hrs

WARNING
DO NOT CHARGE
IN A HAZARDOUS AREA

Fitted when equipment is not supplied with an approved chargers SBCP-1536 or SBCP-1537.

24 Details of Variations to this Certificate

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 -- 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.
- Variation V2 - This certificate was originally issued by Notified Body number 0891 under Directive 2014/34/EU. The technical file has been transferred to Element Notified Body number 2812 without further assessment or evaluation.

25 Notes to CE marking

In respect of CE Marking, Element Materials Technology accepts no responsibility for the compliance of the product against all applicable Directives in all applications.

26 Notes to this certificate

Element Materials Technology certification reference: **NR-JCEQ-0012**

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Notified Body number 2812 is the designation for Element Materials Technology Rotterdam BV.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variation certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

27 Conditions for the validity of this certificate

This certificate remains valid for so long as:

- (i) The equipment listed in section 4 is manufactured in accordance with the documents listed in Appendix A of this certificate.
- (ii) The standards listed in section 9 of this certificate continue to satisfy the Essential Health and Safety Requirements of Annex II of Directive 2014/34/EU and the generally acknowledged state of the art (e.g. as determined by the publishers of those standards).

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC14ATEX0059X V1

APPENDIX A - LIST OF CONTROLLED 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
Zone 1 BC Range of Battery Enclosures Certification Drawing – label	BC-003	1	2019-10-11

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC14ATEX0059X V1

APPENDIX B – 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	25A	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