



# 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 TRC 12.0008X

Issue No: 4

Certificate history:

Status: **Current**

Issue No. 4 (2017-05-25)

Issue No. 3 (2016-12-23)

Date of Issue: **2017-05-25**

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Issue No. 2 (2015-07-01)

Issue No. 1 (2012-08-10)

Issue No. 0 (2012-07-23)

Applicant: **JCE Group**  
East Way,  
Lee Mill Industrial Estate,  
Ivybridge,  
Devon,  
PL21 9LL  
**United Kingdom**

Equipment: **Flameproof Enclosures, EJBC & EJBT Series**

*Optional accessory:*

Type of Protection: **Flameproof**

Marking:

Ex d [ ] IIB Gb T4..T6

Ex d [ ] IIB+H2 Gb T4..T6

Ex tb [ ] III C Db T135..T85°C.

Note : [ ] refers to optional associated 'i.s' output.

Ex d op pr [ ] IIB Gb T4..T6

Ex d op pr [ ] IIB+H2 Gb T4..T6

Ex tb op pr [ ] III C Db T135..T85°C.

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

Certificate issued by:

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





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Manufacturer: **JCE Group**  
East Way,  
Lee Mill Industrial Estate,  
Ivybridge,  
Devon,  
PL21 9LL  
**United Kingdom**

Additional Manufacturing location(s):

**JCE (Europe) Ltd**

East Way,  
Lee Mill Industrial Estate,  
Ivybridge,  
Devon,  
PL21 9LL  
United Kingdom

**JCE Group (UK) Ltd**

Blackburn Business Park  
Aberdeen,  
Grampian,  
AB21 0PS  
United Kingdom

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:

<b>IEC 60079-0 : 2011</b> Edition:6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-1 : 2007-04</b> Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-28 : 2006-08</b> Edition:1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
<b>IEC 60079-31 : 2008</b> Edition:1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*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/ExTR12.0008/00](#)  
[GB/TRC/ExTR12.0008/03](#)

[GB/TRC/ExTR12.0008/01](#)  
[GB/TRC/ExTR12.0008/04](#)

[GB/TRC/ExTR12.0008/02](#)

Quality Assessment Report:

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

[GB/SIR/QAR10.0001/04](#)



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## Schedule

### EQUIPMENT:

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

The EJBC Series enclosures and EJBT Series terminal boxes are flameproof enclosures designed for use with a variety of internal equipment (including terminals). They consist of a rectangular body and a lid which is secured by socket cap screws. On certain versions the lid may incorporate a hinge.

The enclosures are manufactured from LM25 aluminium alloy which may be painted or powder coated.

The lid can be provided with a square or circular window of various sizes as detailed in the schedule below. The circular windows which may be fitted are identical to the lids fitted to the GUB1 (60mm dia.) and GUB3 (86mm dia.) enclosures.

Holes for cable entries, operators, indicators and breathers in the size range M20 to M90 and 1/2" to 3" NPT may be drilled in the enclosure in the areas indicated in the manufacturer's documents. This equipment has been tested and assessed for use with a Redapt BD-U breather drain (IECEX SIR.08.0096X & Sira 08ATEX1240X).

The equipment may also be provided with intrinsically safe connections and an option to fit a fibre optic transmitter.

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

1. Where painted or powder coated, the enclosures could present an electrostatic hazard. Clean only with a damp or anti-static cloth.
2. For equipment with temperature class T5 or T4, cables must be suitable for use at temperatures of 100°C (T5) or 135°C (T4).
3. Only suitably ATEX certified cable glands and blanking elements shall be used.
4. As part of the routine maintenance schedule, the condition of the window cement shall be periodically inspected for any degradation or discolouration of the cement that may compromise the explosion protection.
5. The enclosure is to be earthed externally using the earth point provided.
6. Where internal intrinsically safe equipment is fitted, refer to the instructions for permitted category, equipment protection level and gas group.
7. Yield strength of screws shall be 700N/mm<sup>2</sup> minimum. All cover screws shall be tightened to the minimum torques listed for the enclosure version.
8. No modification or refurbishment to flamepaths shall be made without reference to the manufacturer.
9. The minimum distance between flanged joints and any obstructions shall be in accordance with IEC 60079-1 Table 8 (30mm for gas group IIB, 40mm for gas group IIB+H2).
10. A fiber optic transmitter may be fitted, the output from which must always be routed out of the enclosure via armored cable or conduit and must be terminated within a suitably certified enclosure or safe area.



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

Issue 4- Inclusion of a hardened lid version for EJB60 or EJBW60 for use with enclosures housing intrenal fans.

**Annex:**

[Annex to IECEX TRC 12.0008X iss 4.pdf](#)



<b>Gas and Dust Groups and Temperature Ranges</b>			
The enclosures were evaluated for use with the following gas / dust groups and temperature ranges:			
Series Designation	Gas Group	Dust Group	Ambient Temperature Range
EJB10, EJB15, EJBS1	IIB+H <sub>2</sub>	IIIC	-40°C to +40°C or -40°C to +60°C
EJB2, EJBS2, EJB3A, EJB4A, EJB5A, EJB60	IIB or IIB+H <sub>2</sub>	IIIC	-20°C to +40°C or -20°C to +60°C.

<b>Routine Tests</b>		
1. The manufacturer shall perform a 1.5x routine pressure test in accordance with IEC 60079-1 Clause 16.1 at the pressures detailed below. There shall be no prominent deformation or damage which would affect the type of protection, and the flameproof joints shall in no place have been permanently enlarged.		
	Enclosures not containing fans	Enclosures containing fans
EJBS1	14.7bar	Not Permitted
EJBS2	12.3bar	15.8bar
EJB2	12.3bar	Not Permitted
EJB3	11.1bar	11.1bar
EJB4	11.1bar	11.1bar
EJB5	12.2bar	Not Permitted
EJB10	14.3bar	Not Permitted
EJB15	14.3bar	Not Permitted
EJB60	10.5bar	13.5bar



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**Temperature class and maximum power dissipation data**

Enclosure series	Max. Power Dissipation (W)					
	+40°C ambient			+60°C ambient		
	T4 T135	T5 T100	T6 T85	T4 T135	T5 T100	T6 T85
EJB2	-	-	50	-	50	20
EJB3A	-	-	100	-	100	35
EJB4A	-	-	100	-	100	35
EJB5A	350	150	90	350	150	90
EJBW5A	-	150	90	-	150	90
EJBS1	-	-	50	-	50	20
EJBS2	-	-	70	-	70	35
EJB10/15	-	-	20	-	-	20
EJB60	1300	240	240	800	240	130
EJBW60	-	-	240	-	240	130

**Special Conditions for manufacture:**

1. Sources of ultrasonic radiation may not be fitted.
2. Sources of optical radiation may be fitted in windowed and non windowed enclosures. If sources of optical radiation are fitted in windowed variations the complete window must be populated to ensure that the optical energy remains contained within the enclosure. See sheet 2 & 10 drawing no. A3C-3001
3. The contents of the Ex component enclosure may be placed in any arrangement providing that an area of 40% (IIB+H<sub>2</sub>) or 20% (IIB) of each cross sectional area remains free to permit unimpeded gas flow and unrestricted development of an explosion. Separate relief areas may be aggregated provided that each area has a minimum dimension in any direction of 12.5mm.
4. Where fuses are fitted the enclosure shall be marked with the warning "DO NOT OPEN WHEN ENERGISED".
5. Where switchgear is fitted the conditions stated on drawing A3C-3001 Sheet 2, note 2 shall be adhered to.
6. Where power supply conductors for EJB equipment are greater than 16mm<sup>2</sup>, a dedicated earth terminal with dimensions equal to or greater than the terminals for connection of supply conductors shall be fitted. The corresponding earth conductors shall also be of an equivalent or greater size as the incoming power conductors.
7. Where Intrinsically Safe equipment is fitted the maximum power dissipation shall not exceed those stated of drawing no A3C-3001 Sheet 1. When the maximum power dissipation does not exceed the limitation of the +60°C upper ambient, the equipment shall be marked with an upper ambient of between +40°C and +60°C (not exceeding the upper ambient rating of the Intrinsically Safe component itself). The manufacturer shall perform a thermal test to ensure that, in the location where the Intrinsically Safe equipment is fitted, the internal ambient temperature does not exceed the maximum permitted ambient temperature of the Intrinsically Safe equipment.
8. The EJBT series equipment shall include a dedicated earth terminal with dimensions equal to or greater than the terminals for connection of supply conductors.
9. Earth wiring shall have a cross-sectional area in accordance with IEC 60079-0 Table 10.
10. Separation between bare live parts of intrinsically safe equipment and non-intrinsically safe equipment shall conform to the requirements of IEC 60079-11:2011 Clause 6.1.
11. Maximum number of terminals shall be calculated as defined on JCE drawing no. A3C-3012. The manufacturer shall ensure the power dissipation for the relevant temperature class/ambient temperature range does not exceed that permitted.
12. If a breather is fitted then the minimum Temperature Class is T5 for a +60°C ambient.
13. Skim machining of the base internal face of the EJBC60 enclosure is permitted. Components/Base Plate may be mounted directly to the enclosure base providing that the remaining thickness of the enclosure wall into which the components are fastened is at least one third of the nominal diameter of the screw or stud and has a minimum remaining wall thickness of 3mm. Screws used to mount enclosures to the base of the enclosure must be fitted with a washer. If a washer is not utilized at least one full thread must remain free at the base of the blind hole. See sheet 7 of drawing no. A3C-3001.

14. A maximum of two fans may be included in enclosures EJBC S2, 3, 4 and 60. Each fan must have an impeller diameter of not greater than 119mm and a flow rate not greater than 94m<sup>3</sup>/h for Gas Group IIB applications only. The manufacturer shall ensure the power dissipation for the relevant temperature class/ambient temperature range does not exceed the permitted levels, and that the cross sectional area restrictions detailed in condition 3 are adhered to. See sheet 2 drawing no. A3C-3001.
15. A fibre optic transmitter may be fitted, the output from which must always be routed out of the enclosure via armored cable or conduit and must be terminated within a suitably certified enclosure or safe area. See sheet 2 drawing no. A3C-3001.
16. Up to two 12V secondary batteries in series are permitted to be installed inside the EJB S2, 3, 4, 5 and 60 enclosures. Battery type Saft VR 4 D Nickel Cadmium Type K with associated protection circuitry as detailed on Drawing A3C-3001 Sheet 11.
17. Single coin cells of IEC Type A, B, C, E, L or S conforming to UL1642 or IEC 60086-1 may be fitted.
18. Where secondary cells are fitted the enclosure shall be marked with the warning “DO NOT OPEN WHEN AN EXPLOSIVE GAS ATMOSPHERE IS PRESENT”
19. For EJB60 and EJBW60 enclosures utilizing up to a maximum of two fans internally, as detailed by SCOM 14. The enclosure must be used in conjunction with the hardened lid variant as detailed in drawing no. A3C-3014.

**Manufacturer's Documents**

Title:	Drawing No.:	Rev. Level:	Date:
Certification Drawing EJB Series Equipment Enclosures to Ex d IIB & IIB+H <sub>2</sub> (Sheets 1 to 14)	A3C-3001	8	2017-05-02
EJBC, EJBWC and EJBT Series Control and Instrument Enclosures. Installation and Maintenance Instructions	-	22 June 2015	2015-06-22
EJB enclosures – Terminal calculations	A3C-3012	1	2012-05-23
(Sheet 1 of 5) EJB60 Plain Cover TE Hardened	A3C-3014	1	2017-05-02
(Sheet 2 of 5) EJB60 Window Cover Portrait View TE Hardened	A3C-3014	1	2017-05-02
(Sheet 3 of 5) EJB60 Window Cover Landscape View TE Hardened	A3C-3014	1	2017-05-02
(Sheet 4 of 5) EJB60/EJBW60 Hinge Fixings	A3C-3014	1	2017-05-02
(Sheet 5 of 5) EJB60/EJBW60 Material Specifications	A3C-3014	1	2017-05-02

- Denotes no information provided





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EJB SERIES ENCLOSURE – CATALOGUE NUMBERS

	Plain Cover		Ø60 Window		Ø86 Window		75 x 75 Window		125 x 60 Window		220 x 80 Window		247 x 199 Window		299 x 199 Window		
	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	Full Ht	Red'd Ht	
EJB2 SERIES	EJB2																
EJB3 SERIES	EJB3A	EJB3RA	EJBH3A	EJBH3RA	EJBH31A	EJBH31RA	EJBWH3A	EJBWH3RA									
EJB4 SERIES	EJB4A	EJB4RA	EJBH4A	EJBH4RA					EJBWV4A	EJBWV4RA	EJBWH4A	EJBWH4RA	EJBWM4A	EJBWM4RA	EJBWL4A	EJBWL4RA	
EJB5 SERIES	EJB5A	EJB5RA	EJBH5A	EJBH5RA					EJBWV5A	EJBWV5RA							
EJB6 SERIES	EJB6																
EJB10 SERIES	EJB10																
EJB15 SERIES	EJB15																
EJB60 SERIES	EJB60										EJBW60						

Within the model designation, the coding "C" indicates an equipment enclosure, "T" indicates a terminal box, "W" indicates a window version, "A" indicates flat covers are available, "R" indicates reduced height variations are available, "L" and "M" are applicable to variants fitted with a window only and indicate large and medium sized windows respectively.

**Note:** For EJB3, EJB4 and EJB5 Series Enclosures fitted with hinges, 'C' is added to the catalogue No.  
Example – EJB3 reduced height enclosure with hinges denoted as EJB3RAC