



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Component intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 03ATEX3087U** Issue: **8**

4 Component: **Evolution (designated by the letter 'V' in product reference) Range of Type B Lead Acid Motive Power Cells**

5 Applicant: **Energys S.A.R.L.**

6 Address: **ZI Est
Rue Alexander Fleming
62033 Arras
France**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component 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 listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2006 EN 60079-7:2007 EN 61241-0:2006 EN 61241-1:2004

10 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when incorporated into equipment. Any special conditions for safe use are listed in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

12 The marking of the component shall include the following:



II 2 G

II 2 D

Ex e II

Ex tD A21 IP65 (This marking is applicable but does not appear on the actual cells, however, it is applied to the batteries that they subsequently form part of.)



I M2

Ex e I

Project Number 16168
C. Index 08

D R Stubbings BA MIET
Certification Manager

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13 DESCRIPTION OF COMPONENT

The Evolution Type B range of lead acid traction cells are designated by the manufacturer as IEC 254-2 Serie E cells. Each cell is 158 mm wide and has 2 to 9 positive plates terminated on two terminal posts. Connection to the terminal posts may be by the use one of the following methods:

- Sealed post terminals, welded, with insulating covers.
- Induction welded terminals with encapsulated caps.
- Female threaded inserts with insulated bolt heads.
- Female threaded inserts incorporating insulated caps.
- Male threaded inserts with insulated anti-vibration locknuts.

A pressure vent cap is fitted to the top of the cell casing and this vents at a pressure of <0.15 bar. The cell is filled with gelled electrolyte and is maintenance free.

Typical cell type designation: S6PzVB67

S = Single posted cells, 6 = Number of positive plates, PzVB67 = Type (V = Evolution)

Variation 1 (dated 14 October 2005 re-issued 14 September 2006) - This variation introduced the following changes:

- i. The manufacturer's name was changed from Hawker France S.A. to Hawker S.A.R.L.
- ii. The introduction of minor modifications to the certified drawings, none of which affect aspects of the product that are relevant to explosion safety.

Variation 2 (dated 14 September 2006) - This variation introduced the following changes:

- i. The addition of a mud space to the bottom of the cells.

Variation 3 (dated 6 August 2007) - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2), EN 50019:2000 and EN 50281-1-1:1998, were replaced by EN 60079-0:2006, EN 60079-7:2007, EN 61241-0:2006 and EN 61241-1:2004, the markings in section 12 were updated accordingly.
- ii. Minor modifications of the certified drawings were recognised, these are amendments are in-line with the new standards listed above and also correct typographical errors.
- iii. An additional warning label was introduced; this uses an alternative label material and fixing method.

Variation 4 (dated 26 September 2007) - This variation introduced the following changes:

- i. The addition of two alternative materials for cell enclosure.



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Variation 5 - This variation introduced the following changes:

- i. To allow the introduction of an alternative polypropylene copolymer housing material.
- ii. The recognition of minor drawing modifications; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.
- iii. To recognise a rise in the maximum discharge current from 270 A to 310 A.
- iv. Drawings SIRAATEX1, SIRAATEX4 P25127 and P25128 are amended to remove reference to the minimum contact area.
- v. Drawings SIRAATEX1, SIRAATEX4 P25127, P25128, P24807 and P24808 have been modified to include a wider range of cable cross sections.
- vi. To allow the PzVB 26, PzVB 54 and PzVB 92 cells to be removed.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	3 April 2003	R53A9706A	The release of the prime certificate in the name of Hawker GmbH, Dieckstrasse 42, D-58089 Hagen, Germany.
1	6 July 2004	R53A11442A	The re-issue of the prime certificate in the name of Hawker France SA, ZI Est, Rue Alexander Fleming, 62033 Arras, France to introduce the changes described in report number R53A11442A and to correct the conditions of certification.
2	14 October 2005	R51A13711A	The introduction of Variation 1 subsequently re-issued on 14 September 2006 to correct a typographical error.
3	14 September 2006	R51A15692A	The introduction of Variation 2.
4	6 August 2007	R51A16168A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 4, Issues 0 to 3 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The introduction of Variation 3.
5	26 September 2007	R51A17275A	The introduction of Variation 4.
6	14 February 2008	R52A17587A	To recognise the change of Applicant's name from Hawker S.A.R.L. To Enersys S.A.R.L.
7	11 February 2010	R19846A/00	The introduction of Variation 5.
8	29 March 2011	R51A16168A/01	Re-issued to allow Report R51A16168A/01 to replace R51A16168A

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Sira Certification Service

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15 SPECIAL CONDITIONS FOR SAFE USE

15.1 These components comply with EN 60079-0:2006 clause 23.2 (acceptable electrochemical systems), EN 60079-7:2007 clauses, 5.7.3 (classification), 5.7.1.3 (cells), 5.7.1.4 (connections) and 6.6.3 (shock test). When they are assembled into a battery, the remaining clauses of EN 60079-7:2007 need to be addressed with particular reference to clauses 5.7.1 (general requirements), 5.7.4 (charging in hazardous areas), 5.7.5 (discharge of cells), 5.7.6 (incorporation of other protection concepts), 5.7.7 (disconnection and transportation), 5.7.1.2 (battery containers), 6.6.2 (insulation resistance) and 6.6.4 (ventilation).

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

17.3 The manufacturer shall include the cell marking details in the instruction leaflet.

Certificate Annexe

Certificate Number: Sira 03ATEX3087U
Component: Evolution Range of Type B Lead Acid Motive Power Cells
Applicant: Enersys S.A.R.L.



Issue 0

The drawings associated with this Issue was replaced by those listed in Issue 1.

Issue 1

Number	Sheet	Rev.	Date	Description
P25127	1 of 1	5	28 May 04	158 mm Gelled Type B Lead Acid Motive Power Cells
P25326	1 of 4	2	28 May 04	'France' Manufactured Parts Labels
P25326	2 of 4	2	28 May 04	'Germany' Manufactured Parts Labels
P25326	3 of 4	2	28 May 04	'Poland' Manufactured Parts Labels
P25326	4 of 4	2	28 May 04	'Czech Republic' Manufactured Parts Labels

Issue 2

Number	Sheet	Rev.	Date	Description
P25127	1 of 1	6	27 Jun 05	158 mm Gelled Type B Lead Acid Motive Power Cells
P25326	1 of 4	3	27 Jun 05	'France' Manufactured Parts Labels
P25326	2 of 4	3	27 Jun 05	'Germany' Manufactured Parts Labels
P25326	3 of 4	3	27 Jun 05	'Poland' Manufactured Parts Labels
P25326	4 of 4	3	27 Jun 05	'Czech Republic' Manufactured Parts Labels

Issue 3

Number	Sheet	Rev.	Date (Sira stamp)	Description
P25127	1 of 1	7	13 Sep 06	Gelled Lead Acid Motive Power Cells Type B

Issue 4

Number	Sheet	Rev.	Date (Sira stamp)	Description
P25127	1 of 1	9	25 Jul 07	Lead Acid Motive Power Cells Type B
P25326	1 of 4	5	25 Jul 07	Cell/Battery Labels
P25326	2 of 4	5	25 Jul 07	Cell/Battery Labels
P25326	3 of 4	6	25 Jul 07	Cell/Battery Labels
P25326	4 of 4	5	25 Jul 07	Cell/Battery Labels

Issue 5

Number	Sheet	Rev.	Date (Sira stamp)	Description
P25127	1 of 1	9	26 Sep 07	Gelled Lead Acid Motive Power Cells Type B

Issue 6

Number	Sheet	Rev.	Date (Sira stamp)	Description
P25127	1 of 1	13	14 Feb 08	Gelled Lead Acid Motive Power Cells Type B

Issue 7

Number	Sheets	Rev.	Date (Sira stamp)	Description
P25127	1 of 1	14	18 Jan 10	Lead Acid Motive Power Cells Type B
P25326	1 of 4	7	18 Jan 10	'France' Manufactured Parts Labels
P25326	2 of 4	7	18 Jan 10	'Germany' Manufactured Parts Labels
P25326	3 of 4	8	18 Jan 10	'Poland' Manufactured Parts Labels
P25326	4 of 4	7	18 Jan 10	'Czech Republic' Manufactured Parts Labels

Issue 8 No new drawings were introduced

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