



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 01ATEX3019U** Issue: **10**

4 Component: **Type D 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 Type D range of lead acid traction cells are designated by the manufacturer as IEC 254-2 Serie L cells. Each cell is 198 mm wide and has 2 to 10 positive plates terminated on two or four 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.
- An alternative solid link cell connector for those batteries where no movement of the cell is possible after installation.
- An alternative cell connector where the end of the connecting cable is welded to a copper strip to form a termination, which is then fastened to the cell terminal post by a threaded fastener.

Vent plugs are fitted to the top of the cell casing and may be a flip-top type or a type having an indicator/float arrangement. The cell is topped up in a non-hazardous area. An air mixing tube is also provided for use during charging of the cell, which is also an operation carried out in a non-hazardous area.

Typical European Low Maintenance designation: S6PZM55WF
S = (S)ingle or (D)ouble posted cells
6= Number of positive plates
PZW55 = Type

Typical European cell type designation: S6PZS60
S = (S)ingle or (D)ouble posted cells
6= Number of positive plates
PZS60 = Type

Typical Hawker Traction cell type designation: SCUH5
S = (S)ingle or (D)ouble posted cells
CUH = Type
5 = Number of positive plates

Correlation of cell types		
European low maintenance	European	Hawker Traction
PZM60	PZS60	CUH
PZM80	PZS80	CVH
PZM90	PZS90	CWH
PZM105	PZS105	CXH
PZM115	PZS115	CYQ
PZM125	PZS125	CYX
PZM140	PZS140	CZH
PZM155	PZS155	CZH

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Variation 1 (dated 15 October 2002) - This variation introduced the following changes:

- i. The correlation of cell types was modified and a new cell type, CBH, was included in the list.
- ii. The cell height to be changed.

Variation 2 (dated 3 April 2003) - This variation introduced the following changes:

- i. The introduction of an alternative solid link cell connector for those batteries where no movement of the cell is possible after installation.
- ii. The introduction of an alternative cell connector where the end of the connecting cable is welded to a copper strip to form a termination, which is then fastened to the cell terminal post by a threaded fastener.
- iii. The introduction of Apparatus Group I, Category M2 and EEx e I marking.

Variation 1 (dated 14 October 2005) - 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 11 August 2006, re-issued 19 September 2006) - This variation introduced the following changes:

- i. The separator to be manufactured from a thickness of 1.9 ± 0.3 mm.
- ii. The cell enclosures to be manufactured with a larger wall section tolerance.

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 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 recognise the introduction of the type PzM range of cells, these cells utilise an alternative terminal post.
- ii. To allow the introduction of an alternative polypropylene copolymer housing material.
- iii. 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.
- iv. To recognise a rise in the maximum discharge current from 270 A to 310 A.
- v. Drawings SIRAATEX1, SIRAATEX4 P25127 and P25128 are amended to remove reference to the minimum contact area.
- vi. Drawings SIRAATEX1, SIRAATEX4 P25127, P25128, P24807 and P24808 have been modified to include a wider range of cable cross sections.
- vii. To allow the PzW cells to be replaced by PzM cells, the table above has been amended to reflect this.
- viii. The company name change to Enersys S.A.R.L. was recognised.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	1 November 2001	R53A7212B	The release of the prime certificate in the name of Hawker GmbH, Dieckstrasse 42, D-58089 Hagen, Germany.
1	15 October 2002	R53A9083A	The introduction of Variation 1.
2	3 April 2003	R53A9706B	The introduction of Variation 2.
3	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 incorporate variation 1 dated 15 October 2002 and variation 2 dated 3 April 2003.
4	14 October 2005	R51A13711A	The introduction of Variation 1.
5	11 August 2006	R51A15249B	The introduction of Variation 2, subsequently re-issued on 19 September 2006 to permit report number R51A15249B to replace report number R51A15249A.
6	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 6, Issues 0 to 5 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.
7	26 September 2007	R51A17275A	The introduction of Variation 4.

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Issue	Date	Report no.	Comment
8	14 February 2008	R52A17587A	To recognise the change of Applicant's name from Hawker S.A.R.L. To Enersys S.A.R.L.
9	11 February 2010	R19846A/00	The introduction of Variation 5.
10	29 March 2011	R51A16168A/01	Re-issued to allow Report R51A16168A/01 to replace R51A16168A

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.

Certificate Annexe

Certificate Number: Sira 01ATEX3019U
Component: Type D Lead Acid Motive Power Cells
Applicant: Enersys S.A.R.L.



Issue 0 to 2

The drawings associated with these Issues were replaced by those listed in Issue 3.

Issue 3

Number	Sheet	Rev.	Date	Description
SIRAAATEX4	1 of 1	4	28 May 04	198 mm Type D 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 4

Number	Sheet	Rev.	Date	Description
SIRAAATEX4	1 of 1	5	27 Jun 05	198 mm Type D 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 5

Number	Sheet	Rev.	Date (Sira stamp)	Description
SIRAAATEX4	1 of 1	6	11 Sep 06	198 mm Type D Lead Acid Motive Power Cells

Issue 6

Number	Sheet	Rev.	Date (Sira stamp)	Description
SIRAAATEX4	1 of 1	8	25 Jul 07	Acid Motive Power Cells Type D
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 7

Number	Sheet	Rev.	Date (Sira stamp)	Description
SIRAAATEX4	1 of 1	10	26 Sept 07	Acid Motive Power Cells Type D

Issue 8

Number	Sheet	Rev.	Date (Sira stamp)	Description
SIRAAATEX4	1 of 1	12	14 Feb 08	Acid Motive Power Cells Type D

Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
P25925	1 of 1	B	18 Jan 10	PzM pillar
SIRAAATEX4	1 of 1	14	18 Jan 10	Acid Motive Power Cells Type D
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 10 No new drawings were introduced.

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