



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 01ATEX3022X** Issue: **16**

4 Equipment: **Traction Batteries Up To 68.8 kWh**

5 Applicant: **Hawker GmbH**

6 Address: **Dieckstraße 42
Hagen D-58089
Germany**

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

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment 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 IEC 60079-0:2018 EN IEC 60079-7:2015+A1:2018 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2 G
II 2 D
Ex eb IIC T6 Gb
Ex tb IIIC T80°C Db



I M2
Ex eb I Mb

Signed: Michelle Halliwell

Title: Director of Operations



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13 DESCRIPTION OF EQUIPMENT

The range of Traction Batteries comprise fabricated mild steel containers in which a range of increased safety, lead-acid cells are arranged. The batteries are manufactured with a power up to 68.8 kWh and a nominal voltage up to 400 V.

The containers utilise louvered and baffled ventilation slots to prevent the evolution of explosive concentrations of hydrogen and oxygen within the container's internal free volume. A large number of different configurations and shapes may be manufactured, within the limits described on the manufacturer's specification drawings.

The type designation code is made up of the following:

- No of cells and battery type reference
- No of terminals (single or double post)
- Number of positive plates
- Cell type
- Capacity per positive plate

The minimum ventilation ratios of the battery containers are:

- Battery container top vents = 850 mm²/kWh
- Battery container side vents = 1320 mm²/kWh

The battery container is fitted with a suitably certified cable gland to protect the cable that is fitted between the battery and attached apparatus. Alternatively, a rubber grommet and a suitably certified intermediate terminal box may be fitted.

There is also the option to fit a suitably certified increased safety enclosure with a flameproof socket to the side of the battery enclosure, located where the connecting cables exit the enclosure. The particular assembly that is fitted is not specifically identified as part of the battery certification.

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

- i. The addition of alternative insulating coatings for the internal surfaces of the battery enclosure.
- ii. The option to fit a suitably certified increased safety enclosure with a flameproof socket to the side of the battery enclosure, located where the connecting cables exit the enclosure. The particular assembly that is fitted is not specifically identified as part of the battery certification.
- iii. The design of the cells utilised in the construction of the battery was modified.

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

- i. The introduction of Apparatus Group I, Category M2 and EEx e I marking.
- ii. The use of Evolution Type B and Evolution Type D cells was allowed.
- iii. The use of battery crates with 9 cell and 20 cell layouts was allowed.

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Variation 1 (dated 22 July 2005) - This variation introduced the following change:

- i. The use of an alternative label.

Variation 2 (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 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. Battery arrangements up to 400 V were allowed to be used.
- iv. 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 change:

- i. The addition of two alternative materials for cell enclosures and inside battery enclosure.

Variation 5 (dated 26 September 2007) - This variation introduced the following change:

- i. The removal of Cell Layout from the Type Designation Code.

Variation 6 - This variation introduced the following changes:

- i. 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.
- ii. To allow a change in the product description to allow the capacity to be specified in kWh.
- iii. Drawings SIRAATEX1, SIRAATEX4 P25127, P25128, P24807 and P24808 have been modified to include a wider range of cable cross sections.

Variation 7 - This variation introduced the following change:

- i. The introduction of a new label drawing showing the brand name Oerlikon was recognised.

Variation 8 - This variation introduced the following change:

- i. Recognition of the company name and address change:

From:	To:
Enersys S.A.R.L. ZI Est rue A Fleming 62033 Arras France	Enersys s.r.o. Nádražní 555 26724 Hostomice pod Brdy Czech Republic

- ii. Removal of the compliance standards and inclusion of the company website address (as applicable), to the labels detailed on the drawings.



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Variation 9 - This variation introduced the following changes:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2006, EN 60079-7:2007, EN 61241-0:2006 and EN 61241-1:2004 were replaced by EN 60079-0:2012+A11:2013, EN 60079-7:2015 and EN 60079-31:2014, the markings were updated accordingly to recognise the new standards. A suffix "X" is added to the certificate, to acknowledge the necessity to charge the battery in a non-hazardous location in the instruction manual;
- ii. To introduce a new range of cells, known as the NexSys, which have 6 to 27 positive plates in groups of 3, with 7 different heights
- iii. Replacement of the current notified body number "0518", with the generic code "nnnn".

Variation 10 - This variation introduced the following change:

- i. The notified body number was modified from "nnnn" to "2813".
- ii. Include a modification to the product name on the two ATEX battery labels:

From: Nexsys	To: Nexsys _{SCORE}
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Variation 11 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2012+A1:2013, and EN 60079-7:2015 were replaced by EN IEC 60079-0:2018, and EN IEC 60079-7:2015+A1:2018; the markings were updated accordingly to recognise the new standards and a Specific Condition was introduced.
- ii. The Certificate holders name and address was changed:

From:	To:
Enersys s.r.o.	Hawker GmbH
Nádražní 555	Dieckstraße 42
26724	Hagen D-58089
Hostomiče pod Brdy	Germany
Czech Republic	

Variation 12 - This variation introduced the following changes:

- i. To change the product name

From	To
Nexsys _{SCORE} Traction Batteries Up To 68.8 kWh	Traction Batteries Up To 68.8 kWh

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	1 November 2001	R53A7212B	The release of the prime certificate in the name of Hawker GmbH, Dieckstrasse 42, D-58089 Hagen, Germany.

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Issue	Date	Report number	Comment
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	22 July 2005	R51A13744A	The introduction of Variation 1.
5	14 October 2005	R51A13711A	The introduction of Variation 2.
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.
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. The introduction of Variation 5.
9	11 February 2010	R19846A/00	The introduction of Variation 6.
10	18 November 2010	R23702A/00	The introduction of Variation 7.
11	10 April 2017	R70073976A	This Issue covers the following changes: <ul style="list-style-type: none">EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. <i>(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. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</i>The introduction of Variation 8.
12	15 October 2019	0953	Transfer of certificate Sira 01ATEX3022 from Sira Certification Service to CSA Group Netherlands B.V.
13	18 November 2019	R70141862A	The introduction of Variation 9.
14	23 June 2020	R80037186A	This Issue covers the following changes: <ul style="list-style-type: none">A typographical error was corrected in the marking, Section 12.The introduction of Variation 10.
15	31 March 2022	R80095476A	The introduction of Variation 11.
16	11 August 2022	R80130535A	The introduction of Variation 12.

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- 15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)
- 15.1 The battery shall not be charged in a hazardous area.
- 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 MANUFACTURE**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 The manufacturer shall include the cell marking details in the instruction leaflet.
- 17.4 Each battery shall be subjected to a routine insulation test in accordance with EN 60079-7:2007 clause 6.6.2. The insulation resistance shall be at least 1 MΩ between the live parts and the battery container.

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Certificate Annexe



Certificate Number: Sira 01ATEX3022X
Equipment: Traction Batteries Up To 68.8 kWh
Applicant: Hawker GmbH

Issue 0 to 2

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

Issue 3

Drawing	Sheets	Rev.	Date	Title
SIRAATEX1	1 of 1	4	28 May 04	158 mm Type B Lead Acid Motive Power Cells
SIRAATEX4	1 of 1	4	28 May 04	198 mm Type D Lead Acid Motive Power Cells
P25127	1 of 1	5	28 May 04	158 mm Gelled Type B Lead Acid Motive Power Cells
P25128	1 of 1	5	28 May 04	198 mm Gelled Type D Lead Acid Motive Power Cells
P24807	1 of 1	5	28 May 04	Zone 1 Battery with 42 mm Louver Crate
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

Drawing	Sheets	Rev.	Date	Title
P25473	1 of 1	1	13 Jul 05	Cells Labels

Issue 5

Drawing	Sheets	Rev.	Date	Title
SIRAATEX1	1 of 1	5	27 Jun 05	158 mm Type B Lead Acid Motive Power Cells
SIRAATEX4	1 of 1	5	27 Jun 05	198 mm Type D Lead Acid Motive Power Cells
P25127	1 of 1	6	27 Jun 05	158 mm Gelled Type B Lead Acid Motive Power Cells
P25128	1 of 1	6	27 Jun 05	198 mm Gelled Type D Lead Acid Motive Power Cells
P24807	1 of 1	6	27 Jun 05	Zone 1 Battery with 42 mm Louver Crate
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 6

Drawing	Sheets	Rev.	Date (Stamp)	Title
SIRAATEX1	1 of 1	9	25 Jul 07	Acid Motive Power Cells Type B
SIRAATEX4	1 of 1	8	25 Jul 07	Acid Motive Power Cells Type D
P25127	1 of 1	9	25 Jul 07	Lead Acid Motive Power Cells Type B
P25128	1 of 1	9	25 Jul 07	Lead Acid Motive Power Cells Type D
P24807	1 of 1	9	25 Jul 07	Batteries Up To 860 Ah & 68.8 Kw/h
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
P25473	1 of 1	3	25 Jul 07	Cell/Battery Labels

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Certificate Annexe



Certificate Number: Sira 01ATEX3022X
Equipment: Traction Batteries Up To 68.8 kWh
Applicant: Hawker GmbH

Issue 7

Drawing	Sheets	Rev.	Date (Stamp)	Title
SIRAATEX1	1 of 1	10	26 Sept 07	Acid Motive Power Cells Type B
SIRAATEX4	1 of 1	9	26 Sept 07	Acid Motive Power Cells Type D
P25127	1 of 1	9	26 Sept 07	Lead Acid Motive Power Cells Type B
P25128	1 of 1	10	26 Sept 07	Lead Acid Motive Power Cells Type D

Issue 8

Drawing	Sheets	Rev.	Date (Stamp)	Title
SIRAATEX1	1 of 1	13	14 Feb 08	Acid Motive Power Cells Type B
SIRAATEX4	1 of 1	12	14 Feb 08	Acid Motive Power Cells Type D
P25127	1 of 1	13	14 Feb 08	Lead Acid Motive Power Cells Type B
P25128	1 of 1	13	14 Feb 08	Lead Acid Motive Power Cells Type D
P24807	1 of 1	10	14 Feb 08	Batteries Up To 860 Ah & 68.8 Kw/h
P25473	1 of 1	4	14 Feb 08	Cell/Battery Labels

Issue 9

Drawing	Sheets	Rev.	Date (Stamp)	Title
SIRAATEX1	1 of 1	15	18 Jan 10	Acid Motive Power Cells Type B
SIRAATEX4	1 of 1	14	18 Jan 10	Acid Motive Power Cells Type D
P24807	1 of 1	11	18 Jan 10	Batteries Up To 68.8 Kw/h
P25127	1 of 1	14	18 Jan 10	Lead Acid Motive Power Cells Type B
P25128	1 of 1	14	18 Jan 10	Lead 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
P25473	1 of 1	5	18 Jan 10	Battery Labels

Issue 10

Drawing	Sheets	Rev.	Date (Stamp)	Title
P26414	1 of 1	1	17 Nov 2010	Cell Labels

Issue 11

Drawing	Sheets	Rev.	Date (Stamp)	Title
P25326	1 of 4	8	18 Jan 17	'France' Manufactured Parts Labels
P25326	2 of 4	8	18 Jan 17	'Germany' Manufactured Parts Labels
P25326	3 of 4	9	18 Jan 17	'Poland' Manufactured Parts Labels
P25326	4 of 4	8	18 Jan 17	'Czech Republic' Manufactured Parts Labels
P25473	1 of 1	6	18 Jan 17	Battery Labels
P26414	1 of 1	2	18 Jan 17	Cell Labels

Issue 12. No new drawings were introduced

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Certificate Annexe



Certificate Number: Sira 01ATEX3022X
Equipment: Traction Batteries Up To 68.8 kWh
Applicant: Hawker GmbH

Issue 13

Drawing	Sheets	Rev.	Date (Stamp)	Title
P25326	1 of 4	4	09 Oct 19	'France' Manufactured Parts Labels
P25326	2 of 4	4	09 Oct 19	'Germany' Manufactured Parts Labels
P25326	3 of 4	4	09 Oct 19	'Poland' Manufactured Parts Labels
P25326	4 of 4	4	09 Oct 19	'Czech Republic' Manufactured Parts Labels
480-0899-400	1 of 1	A	09 Oct 19	EX Hawker IIC/IIIC
480-0899-401	1 of 1	A	18 Nov 19	EX Hawker IIC/IIIC

The following drawings are now obsolete and shall be removed from the battery certificate.

Drawing	Sheets	Rev.	Title
P25473	1 of 1	6	Battery Labels
P26414	1 of 1	2	Cell Labels

Issue 14

Drawing	Sheets	Rev.	Date (Stamp)	Title
480-0899-402	1 of 1	B	29 Apr 20	ATEX Label, Ex Nexsys IIB/IIIB
480-0899-403	1 of 1	B	29 Apr 20	ATEX Label, Ex Nexsys IIC/IIIC

The following drawings have been replaced by those listed above:

Drawing	Sheets	Rev.	Date (Stamp)	Title
480-0899-400	1 of 1	A	09 Oct 19	ATEX Label, Ex Nexsys IIC/IIIC
480-0899-401	1 of 1	A	18 Nov 19	ATEX Label, Ex Nexsys IIC/IIIC

Issue 15

Drawing	Sheets	Rev.	Date (Stamp)	Title
480-0899-402	1 of 1	D	03 Mar 22	ATEX Label, Ex Nexsys IIB/IIIB
480-0899-403	1 of 1	D	03 Mar 22	ATEX Label, Ex Nexsys IIC/IIIC
P24807	1 of 1	12	03 Mar 22	Zone 1 battery with 42mm louver crate batteries up to 68,8 kWh
P25326	1 of 4	10	03 Mar 22	Label / Arras plant
P25326	2 of 4	10	03 Mar 22	Label / Hagen plant
P25326	3 of 4	10	03 Mar 22	Label / Bielsko plant
P25326	4 of 4	10	03 Mar 22	Label / Hostomice plant

The label drawings 480-0899-402 and 480-0899-403 were updated as following: updated markings/ address change.

On the assembly drawing P24807 the warning label text has been modified from "SEPARATE ONLY IN A NON-HAZARDOUS AREAS" to ""DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT".

The cells label drawings P25326 Page 1 to 4 were updated to include markings update and address change

Issue 16. No new drawings were introduced