



Instructions for use

GB

ATEX CELLS

Instructions for use Hawker® ATEX CELLS

ENGLISH

EC Declaration of Compliance

Ex cells for vehicle drive batteries

EnerSys® hereby confirms that these cells (see below description with serial number and number of the EC type examination certificate, SIRA certification service, notified body number 0518) comply with the provisions of Directive 94 / 9 / EC Devices and Protection Systems for Intended Use in Areas at the Risk of Explosion. The fundamental health and safety requirements are fulfilled by the compliance with the norms: IEC 60079-0, IEC 60079-7, IEC 61241-0 and IEC 61241-1.

Signed _____ (ATEX/IECEX authorised manager)

Serial No.: _____

Ex cell type: _____

EC type examination certificate: SIRA __ ATEX 30 __ U

IECEX Certificate of conformity: IECEX SIR 07.006 __ U

This declaration certifies compliance with the above directives, but does not contain an assurance of properties within the legal meaning. The safety notes of the product documentation supplied must be observed.

Instructions for use

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1. Introduction

These instructions for use contain notes for the mounting and the safe operation of the Ex cells in vehicle batteries. The Ex cells are components within the meaning of the Directive 94/9/EC (ATEX/IECEX).

For the production and circulation as a battery, further requirements of the Directive must be fulfilled, which are not covered by the component certification of the cells and are not the content of these instructions for use.

2. Safety notes

The use of various cell models inside one battery is not permissible. This also applies for design sizes of the same type, executions and or capacities. The Ex cells fulfil the safety requirements in the event of intended use.

The Special Terms and Conditions for Safe Application in accordance with EC Type Examination Certificate Number:

**SIRA 01ATEX3016U, SIRA 01ATEX3019U,
SIRA 03ATEX3087U, SIRA 03ATEX3090U
and**

IECEX Certificate of Conformity IECEX SIR07.0061U, IECEX SIR07.0062U, IECEX SIR07.0063U, IECEX SIR07.0064U must be fulfilled.

If the cells are built together as batteries, as a minimum the conditions set out in EN 60079-7:2007 must be observed:

- 5.7.1 General information
- 5.7.1.2 Battery container
- 5.7.1.3 Cells
- 5.7.1.4 Connector
- 5.7.4 Charging of cells
- 5.7.5 Discharging of cells
- 5.7.6 Inclusion of other ignition protection types
- 5.7.7 Switching off and transport
- 6.6 Secondary batteries
- 6.6.2 Insulation resistance
- 6.6.3 Shock test
- 6.6.4 Ventilation

3. Labelling and area of application

These instructions for use applies for cells in accordance with **EC Type Examination Certificate and IECEX Certificate of Conformity Number:**

IECEX SIR07.0061U - SIRA 01ATEX3016U Type B Lead Acid Motive Power cells (PzB, PzMB)

IECEX SIR07.0062U - SIRA 01ATEX3019U Type D Lead Acid Motive Power cells (PzS, PzM)

IECEX SIR07.0063U - SIRA 03ATEX3087U Type B Evolution Lead Acid Motive Power cells (PzVB)

IECEX SIR07.0064U - SIRA 03ATEX3090U Type D Evolution Lead Acid Motive Power cells (PzV)

The U character behind the certificate number indicates that this certificate must not be mistaken for a certificate intended for a device or protective system. This component certificate may only be used as the basis for the certification of a device or protective system. The certificates indicated therefore only refer to the conception and type testing of the specified component cells in compliance with Directive 94/9/EC. To produce and circulate the cells, the manufacturer must fulfil other requirements of the Directive, which are not covered by these certificates.

This gives rise to the necessity that a final installation operation must have fulfilled the requirements as an ATEX and/or IECEX-certified business and able persons.



II 2G Ex e II
II 2D Ex tD A21 IP65
I M2 Ex e I

Ex e II
Ex tD A21 T80°C IP65
Ex e I

These Ex cells may be used in the following areas only:

Group I category M2

Group II category 2 = zone 1 and 21

Group II category 3 = zone 2 and 22

Manufacturers in accordance with the Directive:
EnerSys® SARL, ZI Est, rue A.Fleming, 62033 Arras, France

4. Mounting

When mounting, the cells must be always lifted by all posts simultaneously with insulated hanging equipment.

Ex cells may only be connected in a row (serial connection). No parallel connection is allowed. During mounting, the correct polarity must be observed. For the electrical wiring, only components authorised by EnerSys may be used. Optional aquamatic system and electrolyte circulation must be wired in accordance with EnerSys requirements, e.g. "comply with the electrical wiring". Request corresponding information, if required.

Note: The connection technology, aquamatic system and electrolyte circulation are part of the cell component test and approval and must therefore not be modified!

All components should be obtained from EnerSys.

End connections and intermediate take-offs may also only be carried out with approved components. New, unused screws M 10 x 20 with the prescribed screw lock must be used. Torque **25 + 2 Nm!** It is absolutely mandatory to ensure correct contacting and thread engagement.

The connections must be tightened to the lid. To insure the IP protection, a lid without any hole must be used.

When using connector caps with a hole (only on the negative pole for voltage measurement), the connector chamber must be filled with grease **Berutox M 21 KN**. Battery or cell periphery with electronic components cannot be used with an ATEX/IECEX battery. No level indicator must be mounted on PzM-type Ex cells (no Ex approval as a component) and no Easy Control must be mounted on PzV-type Ex cells (also no Ex approval as component).

Only Ex cells of the same type, size and capacity may be wired together.

The Ex cells must be installed firmly in the battery container. Possible clearances must be filled with stable acidproof filling material. The use of foam-like filling material is not permissible.

5. Commissioning

For the commissioning of the ex cells, the instruction for use of Hawker® perfect plus, Hawker Water Less® and Hawker evolution must be observed (see www.enersys-hawker.com).

In addition, the instruction for use of the device or protective system, in which these Ex cells are integrated, applies. Lead-acid cells, in particular flooded cells, can only be stored to a limited extent without regular recharging. New cells are fully charged on delivery. Hawker perfect plus and Water Less cells must be recharged every 6 weeks at the latest, Hawker evolution cells at the latest within 3 months. When reconstructing batteries, only cells of the same charge and same charging conditions should be wired together. The open-circuit voltage of the cells should be at least 2.13 V / cell in fully charged condition.

6. Operation and charging

For charging and operation, the instruction for use of the normal battery design can be used (see www.enersys-hawker.com). In addition, the instruction for use of the device or protective system, in which these Ex cells are integrated, applies.

Identification values of the Ex cells

Maximum permissible nominal voltage in battery system: 500 V
Ambient temperature range: -20 to 40 °C
Maximum permissible temperature of the battery cells: 55 °C
Rated current: 0.2 C₅

Assignment:		
Nominal capacity C ₅	Connection cross-section	Rated current
up to 200 Ah	16 mm ²	40 A
up to 320 Ah	25 mm ²	64 A
up to 480 Ah	35 mm ²	96 A
up to 640 Ah	50 mm ²	128 A
up to 900 Ah	70 mm ²	180 A
up to 1550 Ah	95 mm ²	310 A

Only approved charging devices and charging characteristics may be used. When integrating charging devices in the vehicle and when charging the batteries in areas at risk of explosion, it is mandatory that the charging system is integrated in the compliance assessment (see EN 60079-7, Item 5.7.4).


Batteries that have reached a higher temperature than 40°C by the end of charging must be cooled down to 40°C before use in areas at risk of explosion.

7. Maintenance and repairs

Only approved EnerSys original spare parts and components may be used. Only Ex cells of a manufacturer with the same type, size and capacity may be used as a replacement. In addition, the instruction for use of the device or protective system, in which these ex cells are integrated, applies. To conduct this work, the rules of EN 60079-19 must be observed. The work carried out must be documented and the device or protective system must be identified with a corresponding R label.

8. Normative notes to be observed (extract)

Directive	1999/92/EC
Directive	94/9/EC
DIN EN 1127-1	Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology
DIN EN 1175-1	Safety of industrial trucks – Electrical requirements Part 1: General requirements for battery powered trucks
DIN EN 60079-0	Explosive atmospheres – Part 0: Equipment - General requirements.
DIN EN 60079-7	Explosive atmospheres – Part 7: Equipment protection by increased safety “e”
DIN EN 60079-19	Explosive atmospheres – Part 19: Equipment repair, overhaul and reclamation
DIN EN 60079-19	Correction 1
DIN EN 61241-0	Electrical apparatus for use in the presence of combustible dust – Part 0: General requirements
DIN EN 61241-1	Electrical apparatus for use in the presence of combustible dust – Part 1: Type of protection “tD”
DIN EN 50272-3	Safety requirements for secondary batteries and battery installations - Part 3: Traction batteries



Wherever you do business, EnerSys® can support you with motive power energy. The Hawker® branded battery range, matched chargers and systems provide trouble free performance under the most demanding service conditions. Our strategically located manufacturing plants are efficient and responsive with a culture of continuous improvement and added value for our business partners.

EnerSys has an enviable position in technology leadership and with significant investment in research and development we intend to stay at the leading edge in product innovation. The recently developed energy solutions: Hawker XFC™ batteries and modular HF chargers: Lifetech®, Life IQ™ and LifeSpeed IQ™ HF chargers, have defined new benefits for our customers: faster recharge, more machine availability, lower operating and investment costs, reduced carbon footprint. Our team of development engineers is driven by the desire to build the best energy solutions and works closely with our customers and suppliers to identify development opportunities. Our bias for rapid innovation means we get new products to market fast.

EnerSys's integrated sales and service network is dedicated to providing our customers with the best solutions and after-sales support for their business. Whether you require 1 battery or a complete fleet of batteries, chargers, a battery handling system and a state of the art fleet management system, you can count on us. EnerSys is the world's largest industrial battery manufacturer and we are dedicated to being the best.

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Please refer to the website address for details of your nearest EnerSys office: www.enersys-emea.com
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