# BATTERY and ENERGY

SOSTIN GROUP

# Battery Manufacturers ,Winston Battery and Elerix , with offices in UK partner with 100Mega

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# 100MEGA ENERGY for EU and SOSTIN GROUP for UK

SOSTIN GROUP

ELE RIX

Winston Battery

ELE RIX
UK and IRELAND

Winston Battery

UK and IRELAND

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100MEGA ENERGY

SOSTIN GROUP

EU

UK

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# Solution for safe battery storage for companies and enterprises

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# We supply battery cells and components for battery storage

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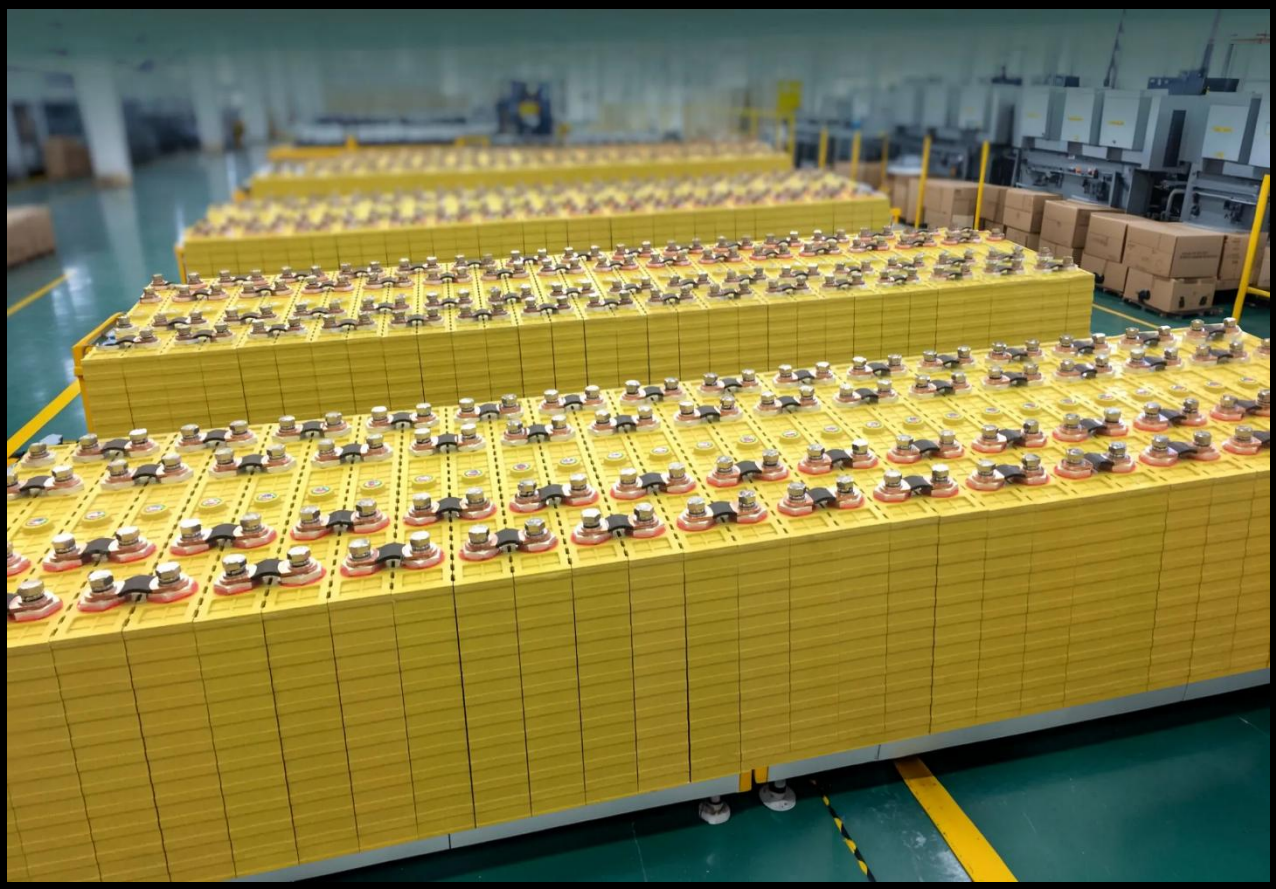

# Winston Battery

Water-based lithium power battery - is the only globally insured product by international AXA and AIG insurance companies

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ELERIX batteries are manufactured in renowned factories in China, which also makes iPhones for Apple

ELERIX may sound as a fresh new brand, and actually it is, however there is a decade long experience in doing business with a number of battery cell manufacturers, of product design and active sales to entities of different size and scope.

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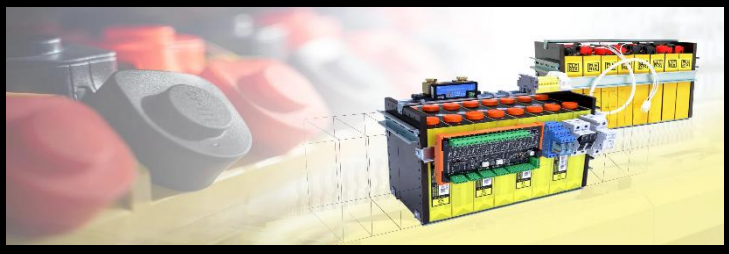

We are a solution provider and project implementer...

We are experts in the field of electricity generation and storage with many years of experience. We offer first-class products that we ourselves trust.

Compared to lead-acid batteries and other lithium alternatives, they excel primarily in terms of longer life , lower weight and  more constant capacity . Other advantages include much faster charging and the fact that they last up to 4x longer in operation , without the need for maintenance. Lithium iron phosphate (LiFePO4) is used as the cathode material.LiFePO4articles in Europe. With this background as a leading ICT distributor of world brands, we are constantly developing our knowledge and experience in the field of batteries and energy storage.

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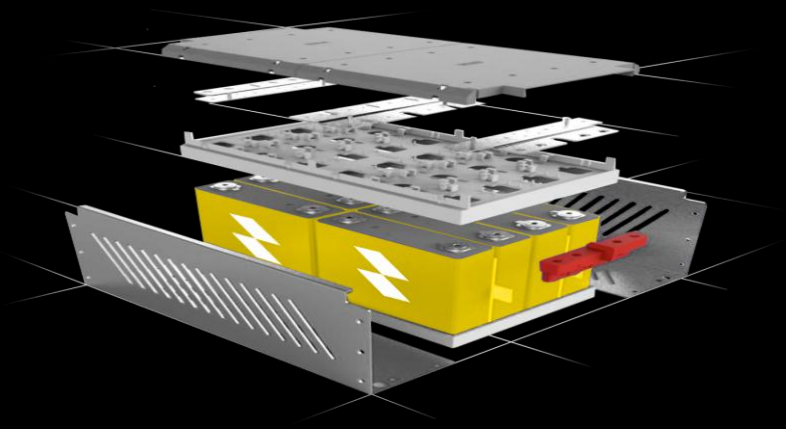
Thanks to this combination, we can guarantee that working with us will give your projects the necessary energy and dynamism.



We design, manufacture and supply complete LiFePO4 batteries are a specific type of lithium-ion battery. Compared to lead-acid batteries and other lithium alternatives, they excel primarily in terms of longer life , lower weight and  more constant capacity .
Other advantages include much faster charging and the fact that they last up to 4x longer in operation , without the need for maintenance. Lithium iron phosphate (LiFePO4) is used as the cathode material.LiFePO4battery systems for your projects.

From concept and prototype, through serial or piece production to subsequent service - everything is tailored to your needs.

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We use top-of-the-line TS WINSTON and ELERIX cells for safe, reliable low-voltage storage up to 60V. With our many years of battery testing and assembly know-how, we guarantee optimal performance and long life for your product.

Implementation of turnkey battery storage projects

We are your partner for a comprehensive battery storage solution for your manufacturing plant, company, apartment building, sports complex, etc.

We will process your project from design to system commissioning, including subsequent service throughout the project's lifetime.

Solutions for everyday use in modern energy:

- Backup, Flexibility,.SPOT

A term referring to spot prices or a spot product. Spot energy prices change based on current supply and demand in the market

- Aggregation and SVR

Power Balance Services - are part of the so-called support services, through which the transmission

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system operator ČEPS ensures the stability of the electricity system

SVR are a  part of a process in which the battery compensates for energy consumption from the grid during periods of peak demand

- Peak shaving(reduction of payments for 15min maximum)
- Community energy
- Supply stabilization and protection against micro-outages

Design and manufacture of batteries for your projects

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We will invent, design and manufacture a prototype for your product using old technology, ensure serial or piece production and take care of service.

Solutions for product manufacturers:

Batteries for boats, buses,Forklift Truck.VZV and other technology

Power supply for self-sufficient lighting systems, security equipment, etc.

Delivery of finished batteries for products

Battery retrofit

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# Implemented projects

## Ranmarine robotic vessels

Ranmarine focuses on producing solutions to improve water cleanliness. The main product is the WasteShark river, canal and water cleaning robot. This robot can operate either independently or can be manually controlled remotely.
The WasteShark robot filters waste from water, is able to run on batteries for up to 10 hours on its own, and can remove up to 500kg of waste from the water during that time.
Other models include the larger MegaShark variant with a driver, or the OilShark, which addresses fuel spills that occur in coastal locations, such as ports and areas with heavy vessel traffic.
We participated in the development of the power supply for Ranmarine and are implementing the supply of batteries using Winston cells.


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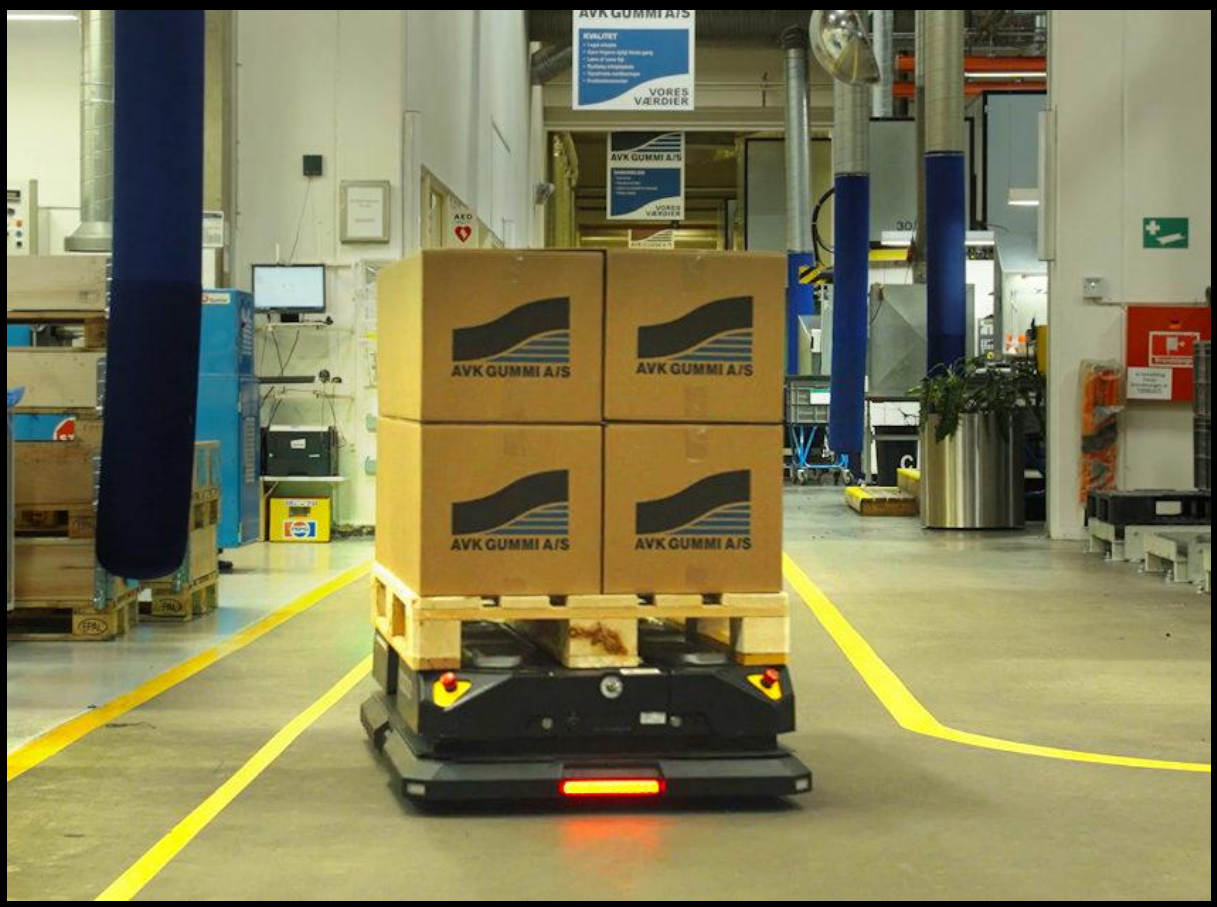
# Transport robots Robotize

Robotize is a Danish company founded in 2016, specializing in the development of autonomous mobile robots (AMR) for the safe and efficient automation of internal material handling in manufacturing plants and warehouses. Their GoPal solution includes various robot models, such as the GoPal E22, E24, E24W and U24W, designed to handle pallets of various types and sizes.
In these solutions we used Winston 50Ah cells, which allow the robot to work for up to 14 hours. The cells are stacked into 48V packs, and thanks to the high charging currents that Winston cells allow, the entire pack can be safely charged in 45 minutes.

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# CE-COLO Data Center

In this installation in the Data Center, as part of the backup power supply renewal project, part of the battery storage (until then fully built on Pb technology) was replaced with a more powerful block of LiFePO4 TS Winston cells, with the complete replacement of Pb technology expected in the future.
This represents a major shift in extending the time for which this new battery block can deliver full power to power the Data Center in the event of a power outage from the DS. The new LiFePO4 block has a usable capacity of 90% (compared to approximately 50% when using Pb technology).

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# Grumant Uhříněves

Grumant sro is a specialist in supplying tools for machining operations such as turning, milling and drilling. It serves over 800 customers, including Škoda Auto and Tatra Trucks.
The installation at Grumat is tailor-made to the spatial possibilities. The 150kWh storage is built vertically. An example of using the modularity of the AMVOLT battery system in a small area. The know-how of stacked battery systems allows the project to be tailored to the customer.


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# Rudolf Jelinek

A photovoltaic power plant with storage in a Battery Pack on the company premises provides energy primarily for the company's operations, with only surpluses being sent to the distribution system. During the year, the three modes of use of the system automatically change according to the level of electricity production from the sun. This means that the company always has its energy needs properly covered. The power plant consists of 333 photovoltaic panels with a total output of 113.22 kWp and an annual production of 100 - 110 MWh of electricity. The assembly also includes Victron inverters and optimizers and a battery system with a usable capacity of 63.36 kWh.


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# Czech self-sufficient house

We are a supplier of solutions to cover all the necessary electrical energy from the sun for the project of a unique self-sufficient house in the middle of nature. The house stands on a plot of land completely without utility networks, yet with full comfort.
The only source of electricity is the house's own photovoltaic power plant with an installed capacity of 10 kWp, supplemented by an extremely durable and high-quality lithium-phosphate battery storage with a capacity of 20 kWh. Standard photovoltaic panels are built into the entire area of the southern part of the gable roof in a classic double-skin structure with a ventilated gap, replacing the roof covering.

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# Hungarotrain electric trains

Hungarotrain kft. builds custom-made electric trains according to specific projects, from large locomotives to smaller mining trains.
The specific project in the photo is a narrow gauge mine railway in which battery boxes built from Winston 3.2V 60Ah cells are used. The individual cells are assembled into battery boxes with a voltage of 72V to power the locomotive.
Due to the possibility of high discharge currents in Winston cells, it is possible to achieve higher short-term performance from a battery with a smaller capacity than would be possible with other cells of the same size.


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# OTHER USES

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# High-voltage storage BESS

Battery Energy Storage System is a system for storing electrical energy using rechargeable batteries.

With selected partners, we implement large-capacity low and high-voltage battery storage systems tailored to the given use and needs from proven components and solutions.
We install systems from 16.6kWh to tens of MWh both in a rack system, i.e. for storage in technical rooms, and using an outdoor cabinet solution that is liquid-cooled/heated. For large storage in the order of MWh, we offer container solutions.
High-voltage storageBattery Energy Storage System is a system for storing electrical energy using rechargeable batteries.BESSis a modern solution for energy storage. Thanks to its high-voltage architecture, you get lower installation costs for transmitted energy and better scalability for large-scale projects for efficient storage of electricity from renewable or traditional sources, which helps to balance fluctuations in consumption and production and ensures smooth operation.
Battery Energy Storage System is a system for storing electrical energy using rechargeable batteries.BESSBattery systems excel in the highest volumetric and gravimetric energy density, while meeting strict safety standards. Investing in BESS brings economic savings, strengthens infrastructure modernization and contributes to environmental sustainability.

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# Large-capacity high-voltage battery storage 261 kWh–5 MWh

| | All-in-one Cabinet 261 kWH | Stand-alone Cabinet 301 kWH |
|---|---|---|
| **Number of sets - boxes** | 5 pcs | 7 pcs |
| **Capacity of individual cells** | 314 Ah | 280 Ah |
| **Cell configuration** | 1P 260S | 1P 336S |
| **Rated voltage** | 832 V | 1075.2V |
| **Voltage operating range** | 728–936 BC | 921.6–1228.8 V |
| **Communication protocol** | Modbus TCP/IP | CAN 2.0 |
| **Communication interface** | Ethernet (RJ45) | Ethernet (RJ45) |
| **Dimensions W × D × H** | 1000×1420×2250mm | 1338×1307×2394mm |
| **Weight** | 2.7 tons | 3.2 tons |
| **Maximum number of P connections** | 10 (on-grid) / 5 (off-grid) | 10 |

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| | Container (20 ft) 2.4 MWh | Container (20 ft) 4 MWh | Container (20 ft) 5 MWh |
|---|---|---|---|
| **Number of seagulls** | 6 pcs | 10 pcs | 12 pcs |
| **Capacity of individual cells** | 306 Ah | 306 Ah | 314 Ah |
| **Configuration** | 6P 416S | 10P 416S | 12P 416S |
| **Rated voltage** | 1331.2V | 1331.2V | 1331.2V |
| **Voltage operating range** | 1164.8–1497.6 V | 1164.8–1497.6 V | 1164.8–1497.6 V |
| **Communication protocol** | CAN 2.0 | CAN 2.0 | CAN 2.0 |
| **Communication interface** | Ethernet (RJ45), RS-485 | Ethernet (RJ45), RS-485 | Ethernet (RJ45), RS-485 |
| **Dimensions W × D × H** | 6058×2438×2896mm | 6058×2438×2896mm | 6058×2438×2896mm |
| **Weight** | 27 tons | 37 tons | 45 tons |

Container systems (20 ft)

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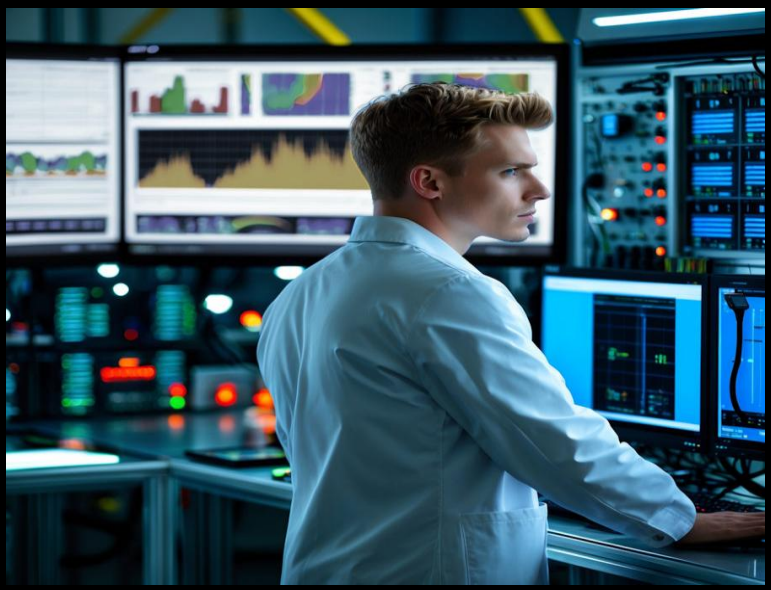
# Battery storage monitoring and BMS

Battery Management System - battery management unit (charge and discharge monitoring,

overcharge and deep discharge protection, cell balancing, temperature control)

Our advanced BMS PRO and battery storage monitoring ensure safe and efficient management and long-term service life of your system. The system monitors data in real time, automatically evaluates key parameters and reacts to any deviations that could cause outages or damage. Thanks to individual settings, the system can be adapted to the specific needs of the installation, which significantly reduces service and maintenance costs.
Our solution uses extensive know-how in testing and managing battery cells. Monitoring services prevent serious failures and increase the efficiency of the entire system. Thanks to our technical background and expert team, our solution is constantly improved; technicians regularly test the system and implement the latest innovations to protect your investment as much as possible



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# Amvolt Solution

AMVOLT Energy BoxIt can be operated with most low-voltage inverters used in the Czech Republic.

Low Voltage - low voltage (in flashlight terminology, not a standard)LV A product with a smaller capacity (kWh) intended mainly for households and small businesses (14.3 - 28.6 - 42.9 kWh); portable.

AMVOLT .Module can be installed and operated with most commonly used grid inverters, PVand in a certain connection, they allow maintaining 100% operation of the entire PV plant even during a grid outage (OffGrid).

The AMVOLT LV Module can be an interior option (e.g. in the aforementioned apartment buildings) or as a container solution .
We supply battery inverters exclusively from the Victron Energy brand in various power variants according to the investor's specifications.


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# Low-voltage storage

Supplied by us Low Voltage - low voltage (in flashlight terminology, not a standard) LVAMVOLT battery storage systems are built on safe low voltage, i.e. up to 60V, on LiFeYPO4 (Lithium Iron Yttrium Phosphate - LFP) technology of top-of-the-line TS WINSTON 1000Ah cells, up to 3C (peak 10C) and ELERIX, of which we are the largest importer and distributor in Europe. We have many years of extensive know-how in testing, assembling and managing these cells.
It is a robust, powerful, easy-to-service, expandable and secure storage device, developed and assembled in the Czech Republic with a real warranty and technical support in Czech, which significantly contributes to its long service life. You buy directly from the manufacturer, not from a dealer.
We are pioneering the theory of an open system that can be serviced, modified or expanded in the future without the need for dependency on AMVOLT. A wiring diagram and a list of components are available, so even an experienced and knowledgeable local electrician can service the storage.
This is a modular system that, in addition to standardized dimensions, can be customized to the spatial possibilities and requirements of investors.
Low Voltage - low voltage (in flashlight terminology, not a standard)LVAMVOLT storage facilities are very well prepared for all possible uses in current and future modern energy, which significantly shortens their economic return (effective storage of surpluses from overproduction for their effective later use, flexibility,Peak Shaving - a process in which the battery compensates for energy consumption from the grid during periods of peak demand.Peak shaving,A term referring to spot prices or a spot product. Spot energy prices change based on current supply and demand in the market.SPOT, community energy, Anti Black-out and others). AMVOLT storage systems are designed for daily long-term use.


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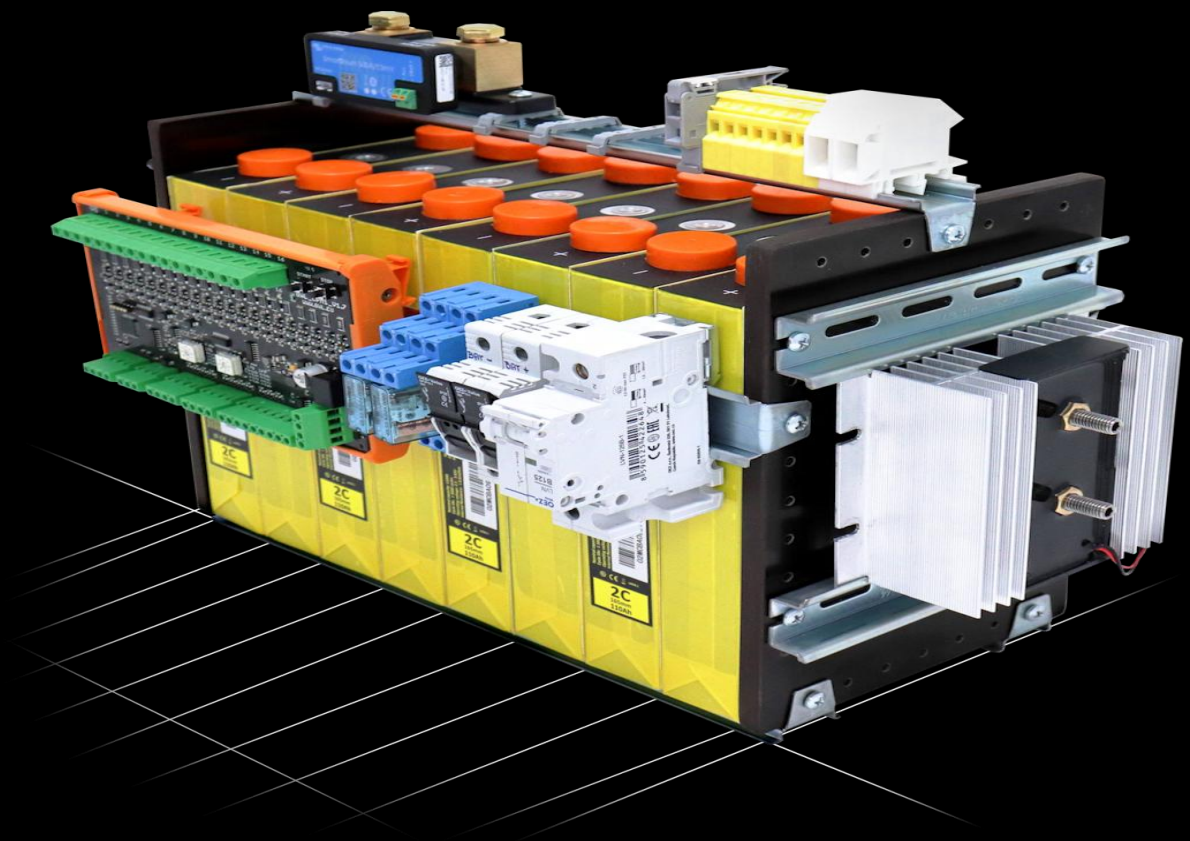
# Custom battery manufacturing

We design and manufacture complete *LiFePO4 batteries are a specific type of lithium-ion battery. Compared to lead-acid batteries and other lithium alternatives, they excel primarily in terms of longer life , lower weight and more constant capacity .*
*Other advantages include much faster charging and the fact that they last up to 4x longer in operation , without the need for maintenance. Lithium iron phosphate (LiFePO4) is used as the cathode material.* LiFePO4 batteries for products and installations. We will ensure prototype realization, serial or piece production, including service.
We can implement and supply, for example:
– Batteries for ships, buses,Forklift Truck. other technology
– Powering self-sufficient systems, for example for lighting or security
– Delivery of ready-made batteries and retrofitting of existing systems



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# Why LYP Should Not Be Simplified as LFP

# LYP ≠ LFP

## Material Innovation

**LFP:** $LiFePO_4$

**LYP:** $LiYFePO_4$ doped with rare-earth Yttrium enhancing structural and thermal stability

## Eco-Friendly Process

**LYP:** Water-based binder, no PVDF or any heavy metal enabiling clean, sustainable production

## Structural Advantage

**LFP:** Only two terminals, metal casing

**LYP:** Multi-terminal + anti-corrosion polymershell, allowing high-current and large-scale discharge

## Superior Performance

| Feature | LYP Battery | LFP Battery |
|---|---|---|
| Safety | Extreme high | High |
| Cycle Life | Over 8000+ cycles 20years | 2.000-3.000 cycles |
| Operating Temp | -45°C +85°C | -20°C +80°C |
| Discharge Rate | High C-rate (Starting/ Traction) | Moderate |
| Green Manufacturing | Water-based non-toxic | PVDF pollutant andcontain toxicfluoride |

**LYP is not a typo—it's a paradigm shift.**

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## FAQ: What does "LYP" battery stands for

### Battery Chemistry

Lithium Yttrium Iron Phosphate (LYP) Battery is Lithium Iron Phosphate batteries with rare earth Yttrium compound which delivers high energy and power density for mobile and stationary applications. Designed as a flat folded prismatic cell that is available in amp hour capacities up to 7,000 amp hours at 3.25 volt nominal voltage makes our product offering as largest single cell capacity available in market today. A large cell configuration reduces number of connections for energy storage applications, increasing reliability while reducing costs. The Lithium Yttrium Iron Phosphate battery is a deep cycle which uses lithium iron phosphate as a cathode material with Yttrium added to improve thermal characteristics and life of the battery. Yttrium when added to the cathode material protects oxidation coating of the Iron molecules during high temperatures, increasing battery life. Yttrium is found in most rare earth minerals and used as a doping agent in construction of Lithium Iron Phosphate battery to strengthen Iron Phosphate molecular structure from oxidation layer damage during high temperature applications.

### Safety – Lithium Batteries

Lithium-Ion Batteries are mostly named after the material used in the cathodes, while the anode materially is generally made of carbon material and variety of electrolytes. Most lithium ion batteries used in consumer electronics products use lithium

cobalt oxide, lithium manganese oxide and lithium nickel oxide cathode material, known for higher energy density but lower life cycle than LYP iron phosphate cathode battery. LYP batteries offer longer life cycle due to inherent stability of iron phosphate molecule when compared to other chemistry.

Lithium Iron Phosphate is safer than other chemistries such as Lithium Cobalt due to complete oxidation of the material around 3.4 volts compared to lithium cobalt around 4.6 volts, which can lead to unsafe events. Complete oxidation of lithium iron phosphate is a stable material called Ferric Phosphate ($FePO_4$). Phosphates are inherently stable and not prone to thermal runaways and will not burn when abuse occurs.

Another benefit of $LiFePO_4$ batteries is that does not contain any heavy metals therefore does not have memory effect like nickel cadmium or nickel metal hydride batteries.

Lithium batteries are much harder to ignite in event of misuse during charge cycles due to stronger bond with the oxygen atom when compared to lithium cobalt and lithium manganese batteries, which during misuse can result in exothermic reactions.

Although any battery chemistry when fully charged can only dissipate additional charge energy as heat, use of Battery Management Systems (BMS) is essential for safe operation of any lithium battery chemistry.



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UK and IRELAND

Winston Battery

Winston Batteries Insured by
AIG and AXA since 1999

AXA AIG

100MEGA ENERGY

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# FOR MORE INFORMATION

Mamufacturers

- https://elerix.com/
- https://elerix.co.uk/
- https://thunderskywinston.uk/

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# CONTACT

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