

COMMSTORE | ENERGY STORAGE SYSTEMS

Industrial Energy Storage Systems

Stability and Savings for Your Company



SUN SERIES

Address:

CommVOLT Sp. z o.o.
Tarnogórska 149
44-100 Gliwice

Contact:

E-mail:

sprzedaz@commvolt.eu

Phone:

+48 690 068 658

+48 530 823 740

NIP: 6312690727

REGON: 385863501

PRODUCT DESCRIPTION

CommSTORE products are energy storage systems with a modular design, including:

- battery sets
- power conversion systems (PCS)
- energy management systems (EMS)
- battery cooling and parameter control systems
- automatic fire suppression system

This product form allows for optimal customization of solutions to meet the required functions of the energy storage system.

BMS Battery Management System (BMS)

Automatically controls and monitors the battery in real-time, offering charge status control and automatic fault diagnostics, ensuring the safe and stable operation of the entire system.

EMS Energy Management System (EMS)

Oversees overall organization and manages the entire energy storage system, enabling cloud data analysis and intelligent operation and maintenance around the clock.



Throughout the entire process of designing and manufacturing energy storage systems, CommSTORE strictly adheres to IEC62933, GB_T36558 standards, as well as relevant national and international regulations.



The product has undergone **60 tests** concerning battery performance, lifespan, safety, and maintenance possibilities, in the context of real-life usage scenarios. This rigorous testing ensures greater reliability of supplied products, professional quality, and safety in operation.

Energy storage systems from CommSTORE can be used both commercially and industrially as emergency power sources, for peak shaving, load leveling, and in cooperation with PV installations, among many other applications.

PRODUCT ADVANTAGES

KEY PRODUCT ADVANTAGES:

✓ Energy Management

- Reduces peak energy consumption.
- Monitors and indicates the status of batteries and other devices.

✓ Easy Expansion

- Modular design allows for easy capacity increase.

✓ Standard Interface

- Standard interface for high-voltage (HV) communication and connections.

✓ High Safety

- Liquid cooling system + long-life LFP cells with multi-level protection.

✓ Frequency Regulation

- Fast response and high precision in providing grid frequency regulation services.

Additionally, CommSTORE energy storage systems are liquid-cooled, which guarantees:

- Reduction of the required area by 40%.
- Extension of service life by over 30%.
- Stable operation (temperature difference with air cooling in a single container is 5–8°C, while with liquid cooling it's below 3°C), providing better protection for battery cells.
- Low failure rate (liquid-cooled cells are housed in battery enclosures with IP66 protection class, minimizing the impact of external factors).
- Separate liquid-cooled battery modules ensure better fire protection and a higher level of safety.



HIGHEST SAFETY GUARANTEE

✔ Electrical Safety

- Protection against overcurrent / external short circuits
- Insulation monitoring
- Grounding system
- Electric shock warning

✔ Functional Protection

- Protection against overvoltage / too low voltage
- Protection against overheating / too low temperature
- Protection against overcurrent
- Protection in case of incorrect communication

✔ Chemical Safety

- Fire-resistant materials
- Safety requirements for battery cells
- Identification of hazardous substances
- Prevention of battery overheating and thermal damage

✔ Mechanical Safety

- Vibration resistance
- Impact resistance
- Explosion-proof protection

✔ Material Selection

- Use of lithium iron phosphate (LiFePO₄) batteries with a capacity of 280 Ah, characterized by a high level of safety and long lifespan.
- Life cycle of up to 8000 cycles.

✔ Cell Production Process

- The electrode sheet winding process minimizes the risk of burrs, degassing, and metallic particle formation, reducing the risk of short circuits during prolonged operation.

✔ Safety Functions

- Safety test results: no fire, no explosion.
- Lithium iron phosphate cells are characterized by high thermal stability, low heat generation rate, and low emission.
- Lithium iron phosphate cells do not release oxygen in case of overcharging or deep discharge.

CELL

- Safety
- Excellent Performance
- High Efficiency
- Full Certification



MB30



MB31



LF280K

PRODUCT PARAMETERS			
Cell Model	MB30	MB31	LF280K
Capacity (Ah)	306	314	280
Dimensions (D×H×W) [mm]	72 × 174 × 207	72 × 174 × 207	72 × 174 × 207
Energy Density (Wh/kg)	175	179	165

Cell Supplier:



BATTERY PACK



EXEMPLARY BATTERY PACK

LIQUID-COOLED

- Safety
- High Integration
- Operational Stability
- Efficient Thermal Management

PRODUCT PARAMETERS

Battery Model	LF280K
Nominal Capacity (Ah)	280
Nominal Energy (kWh)	344.0
Group Configuration	1P384S
Nominal Voltage (V)	1228.8
Voltage Range (V)	1075.2 ~ 1382.4
Standard Charge/Discharge Rate	≤0.5P
Maximum Charge/Discharge Rate	≤0.5P
Operating Temperature Range (Charge) (°C)	0 ~ 55
Operating Temperature Range (Discharge) (°C)	-20 ~ 55
Relative Humidity	5 ~ 95% ((non-condensing)
Dimensions (D×W×H) [mm]	1074 × 862 × 2374
Weight (kg)	~2700
IP Protection Level	IP54
Cooling Type	Liquid Cooling
Certification	GB/T-36276, UL1973, IEC62619

SYSTEM



Models:

SUN SERIES 3.44, SUN SERIES 4.07, SUN SERIES 5.02.

SYSTEM

- Safety and Reliability
- Automatic Fire Protection
- High Integration
- Easy Installation

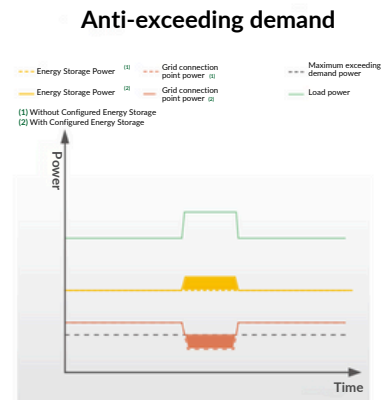
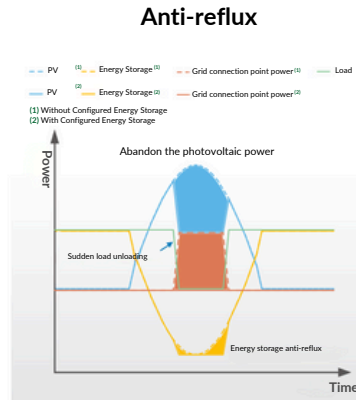
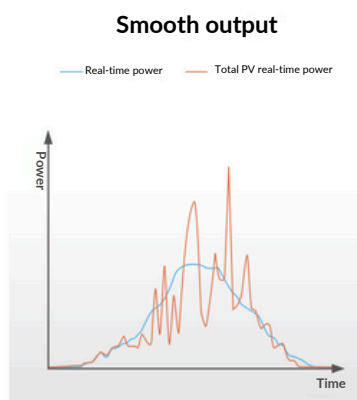
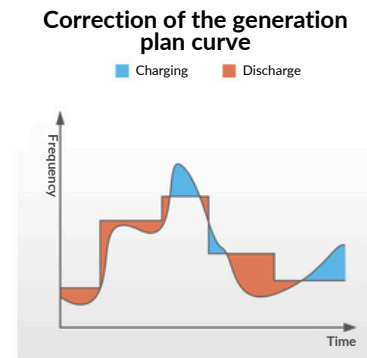
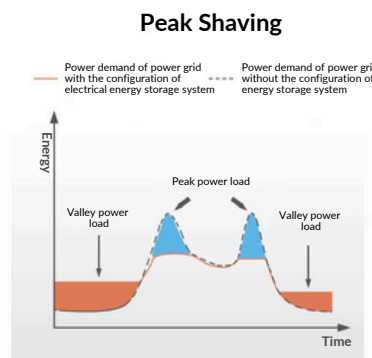
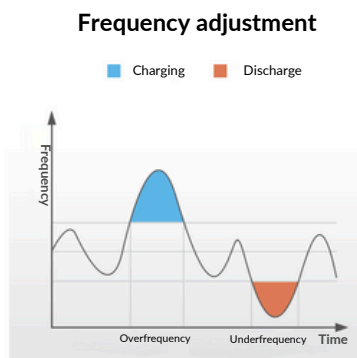
PRODUCT PARAMETERS			
System Model	SUN SERIES 3.44	SUN SERIES 4.07	SUN SERIES 5.02
Cell Model	LF280K	MB30	MB31
System Configuration	10P384S	10P416S	12P416S
Nominal Energy (kWh)	3440	4073	5015
Voltage Range (V)	1075 ~ 1382	1165 ~1498	
Standard Charge/Discharge Rate	≤0.5P		
Maximum Charge/Discharge Rate	≤0.5P		
BMS Communication	CAN, RS485, LAN		
Cooling Type	Liquid Cooling		
Dimensions (D×W×H) [mm]	2438 × 6058 × 2896		2550×6200×2896
Weight (t)	~35	~37	~44
Recommended Ambient Temperature (°C)	-20~55	-40~55	
Relative Humidity	5 ~ 95% (non-condensing)		
IP Protection Level	IP55		
Fire Protection System	Novec1230	Immersed extinguishing system with perfluorinated compounds and water	Adaptation (gas extinguishing, water immersion, etc.)

EMS - Energy Management System

EMS Software

- The system uses a non-relational database of time sequence events as an event history, allowing for quick search and playback of a full picture of failures.
- The HMI (Human-Machine Interface) uses modular (plug-in) technology and supports more complex graphical elements such as line charts, bar charts, pie charts, hydrographs, and instrument panels.
- The graphic design in JavaScript technology allows for balancing system operations with growing and changing user needs in terms of personalization.
- Supported HMI client interfaces and publication through a web browser.

Main Functions of the System:



CHAMBERS AND ORGANIZATIONS



BUSINESS PARTNERS



CERTIFICATES AND STANDARDS



CommSTORE | ENERGY STORAGE SYSTEMS

CommLED | LED LIGHTING SOLUTIONS

CommVOLT | PHOTOVOLTAICS SYSTEM SOLUTION

CommSOFT | SOFTWARE CONTROL LIGHTING

InstallCOMM | PROFESSIONAL ELECTRICAL SERVICES