

High Temperature Resistance Solution for UPS Power Systems in Algeria



Overview

Online UPS Suppliers & Factories in Algeria As a specialized Online UPS supplier for Algeria, REO Power understands that the local grid faces unique challenges.

Key Takeaways

For high-temperature environments in Algeria, UPS systems with kinetic energy storage, lithium-ion batteries, and robust online double-conversion designs provide reliable, long-lasting power protection. Rotary UPS with Kinetic Energy Storage

Piller France has successfully deployed UNIBLOCK™ rotary UPS systems with Powerbridge 60+ flywheel energy storage at Maghreb Emballage near Oran, Algeria. These systems deliver 3.2MW of UPS protection and are designed to operate in ambient temperatures exceeding 40°C, making them ideal for hot climates. Flywheel-based UPS systems offer low maintenance, long lifespan (20+ years), and high efficiency, while providing short-term power support for critical loads without relying on batteries, which are more sensitive to heat.

Online Double-Conversion UPS



For industrial and commercial applications, online double-conversion UPS systems are engineered to handle temperatures above 45°C and provide pure sine wave output to protect sensitive equipment such as servers, medical imaging devices, and SCADA systems. These UPS units often include enhanced dust filtration, remote monitoring via SNMP, and wide input voltage tolerance (110V–300V), which is particularly useful in Algeria's grid with frequent voltage fluctuations .

Lithium-Ion and Hybrid UPS Systems

Modern UPS solutions in Algeria increasingly integrate lithium-ion batteries or solar hybrid systems. Lithium-ion batteries offer longer lifespan (5–7 years in hot climates) compared to lead-acid batteries (2–3 years), higher charge cycles, and reduced footprint. Hybrid UPS systems can seamlessly integrate photovoltaic inputs, supporting Algeria's renewable energy targets while reducing generator fuel costs and ensuring uninterrupted power during outages .

Design Considerations for Hot Environments

- **Temperature Derating:** UPS and battery systems should be derated to account for high ambient temperatures. For every 10°C above 25°C, component lifespan can drop significantly, so oversizing UPS capacity by 15–20% is recommended .
- **Cooling Management:** Use precision cooling, hot aisle/cold aisle containment, and monitor hot spots to maintain optimal operating conditions.
- **Battery Temperature Compensation:** Smart UPS systems adjust charging voltage based on real-time battery temperature to prevent accelerated degradation.
- **Modular Architecture:** Modular UPS allows capacity expansion without downtime, which is useful for scaling operations in industrial or data center environments .

Recommended Approach

For Algeria's high-temperature and dust-prone environments:

- **Industrial Sites:** Consider rotary UPS with flywheel storage for high reliability and minimal maintenance.
- **Data Centers and Hospitals:** Deploy online double-conversion UPS with lithium-ion batteries and remote monitoring.
- **Renewable Integration:** Use hybrid UPS systems to combine solar energy with battery storage for energy efficiency and resilience.
- **Derating and Oversizing:** Always design UPS systems with temperature derating and cooling strategies to ensure long-term reliability. By combining high-temperature tolerant UPS technology, energy storage options, and proper thermal management, organizations in Algeria can maintain continuous, high-quality power for critical operations even under extreme environmental conditions.

Article Content

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Modular UPS Architecture* Like building blocks, these systems allow capacity expansion without downtime. A Tamanrasset telecom

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

