

DATA CENTERS

Powering the AI Revolution

Hyperscale growth, 24/7 reliability, and sustainable computing. Comprehensive energy solutions for the digital infrastructure of the future.

ENERGY STORAGE / BESS

Containerized battery systems replacing diesel backup and enabling grid services.

■ Containerized BESS

Battery systems from 50 to 500+ MWh in ISO containers, ready for rapid deployment alongside data center campuses.

■ Grid Services

Frequency regulation, demand response, and peak shaving to optimize energy costs and generate ancillary revenue.

■ Diesel Replacement

Eliminate diesel backup generators with high-safety LFP storage and zero direct emissions.

■ LFP Batteries

LiFePO4 technology with 6,000+ cycles, maximum thermal safety, and NFPA 855 compliance for critical facilities.

DC POWER ARCHITECTURE

The shift from AC to 380V DC distribution improves efficiency and simplifies infrastructure.

■ 380V DC Distribution

Transition from conventional AC to 380V direct current distribution, the emerging standard for next-generation data centers.

■ Higher Efficiency

2-3% energy savings by reducing AC-DC-AC conversion stages, translating to millions in annual savings at hyperscale.

■ Massive Rectification

High-power rectification systems to convert AC grid power to the data center DC buses.

■ Fewer Conversions

Eliminate redundant converters, reduce components, increase reliability, and free up floor space.

POWER QUALITY

Harmonic control and voltage stability for mission-critical IT equipment.

■ Harmonic Filtering

Server power supplies generate significant harmonics. Active filters maintain THD below 5%.

■ Fault Management

Fault current control and protection coordination to minimize the impact of electrical events.

■ Voltage Tolerance

Precise voltage and frequency regulation within ITIC/CBEMA curves to protect sensitive equipment.

■ Active Filters

Real-time compensation of harmonics, imbalances, and reactive power with high-response active filters.

ELECTRICAL PROTECTION

Integrated protection layers for maximum IT infrastructure availability.

■ UPS Integration

Coordination with UPS systems for seamless transitions and protection against micro-outages and variations.

■ Arc Flash Protection

Arc flash detection and mitigation systems for maintenance personnel safety in electrical rooms.

■ Surge Protection

Multi-level transient voltage surge suppressors (SPD) to protect sensitive IT equipment from lightning and grid impulses.

■ AM-X with 5G/WiFi

Intelligent real-time differential monitoring via 5G and WiFi. Detection from 5 mA without power interruption.

AI POWER DEMANDS

AI model training is redefining data center power requirements.

■ 50-150 MW Clusters

A single AI training cluster can consume 50-150 MW, equivalent to a medium-sized city.

■ Strict PQ Requirements

GPU/TPU accelerators demand exceptional voltage and frequency quality to prevent compute errors and restarts.

■ Extreme Power Density

AI racks exceed 100 kW each, requiring liquid cooling and dedicated power distribution.

KEY FIGURES

>1,000 TWh

Global DC power by 2030

50-500+ MWh

BESS per campus

380V DC

Emerging standard

<12 months

Deployment time

CERTIFICATIONS & STANDARDS

■ CE

■ UL 9540

■ Uptime Institute Tier III/IV

■ IEEE 519

■ IEC 62109

■ FCC

■ NFPA 855

POWER YOUR DATA CENTER

Our engineering team designs comprehensive energy solutions for data centers of any scale.

Eneraq

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European technology · In-house R&D