DATA SHEET

GrapheneUPS

for AI Data Centers

- Based on Skeleton Technologies' in-house supercapacitor technology
  - 50% lower volume for the same performance compared to competitors
  - Safe, no thermal runaway risk
- SiC and GaN converter technology for maximum efficiency and compactness
- Voltage Ride-Through (VRT) capable
- Peak shaving capable, enabling up to:
  - 40% energy savings
  - 40% more compute
  - 44% smaller grid connection

Figure. **GrapheneUPS-500-A1000-E2**, Skeleton Technologies UPS system based on in house CBU800 supercapacitor modules (right-hand side cabinets)

Technical data – key specifications

AC input range	380-480 V, 50/60 Hz
AC voltage, nominal	415 V, 60 Hz
AC current, nominal	1040 A
	Nominal power 710 kW at cos φ=0.95
System topology	Double-conversion UPS
Converter topology	Silicon-carbide three-phase converter with LCL and common mode filter
Energy storage topology options	1. CBU800 cabinet* *Skeleton Technologies' supercapacitor energy storage with gallium-nitride (GaN)–based DC/DC converter integrated into each CBU800 module.* 2. SkelGrid cabinet (equipped with SkelMod supercapacitor or SkelModSB SuperBattery modules in applicable configuration up to 15 modules in series**) **The number of cabinets can be scaled based on the energy need.* *** The module type, and the number of modules in series per cabinet and the number of cabinets depend on the application-specific energy and power need and are fully scalable. Example for high-power continuous cycling: SkelMod 102V94F-F+AF in 15s1p cabinet configuration. Example for backup power: SkelModSB 96V30Ah-B in 10s1p cabinet configuration.*
System efficiency	98% at full load *Estimate – converter efficiency at full load 99.1%.*
Backup time	Configurable from seconds to minutes
Communications	Modbus TCP *Communications interface implemented by the system controller module. Supports concurrent connections.*
HMI	Graphical human-machine interface
Cooling	Liquid *Connection configurable: One connection via system cooling or separate cooling connections for the drive section and the energy storage cabinets.*
Maintenance support	Energy storage modules hot-pluggable. Manual system bypass switch for maintenance.
Features	Grid support according to the applicable grid code requirements Uninterrupted power to IT loads.
Quality certificates	ISO QS9000, ISO 14000
Product compliance standards	IEC, UL

skeleton

info@skeletontech.com
www.skeletontech.com

Block diagram

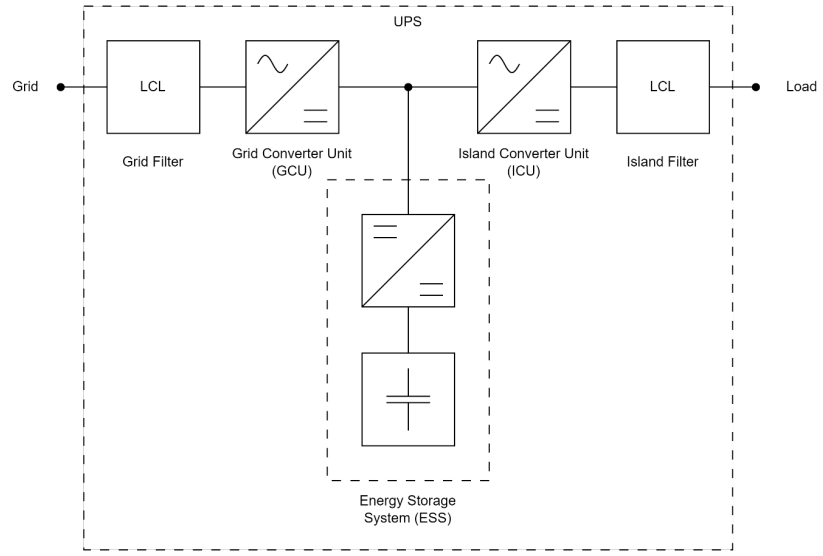

Figure. Key components of the UPS system, double-conversion UPS topology.

CBU800 Module

Figure. **CBU800**, Skeleton Technologies supercapacitor energy storage module. No thermal runaway risk.

GrapheneUPS-500-A1000-E2 – Dimensions