

# Flex-ESS1000

The most flexible utility scale modular energy storage system on the market today

continu  
energy



Balancing energy  
efficiency



- Utility Scale Modular Storage System
- 1Hr to 4Hrs+
- Ultra-Low Lifetime Op-Ex
- Ultra-Low Installation Cost/Time

# Flex-ESS1000 is the most flexible large scale energy storage solution on the market today



Designed for C & I, and grid utility projects



Energy trading & grid services



Minimal Op-Ex for long term cost savings



Quick and easy installation when time is a premium



Compact for small footprint installations



Manufactured in Great Britain



Modular & flexible solution



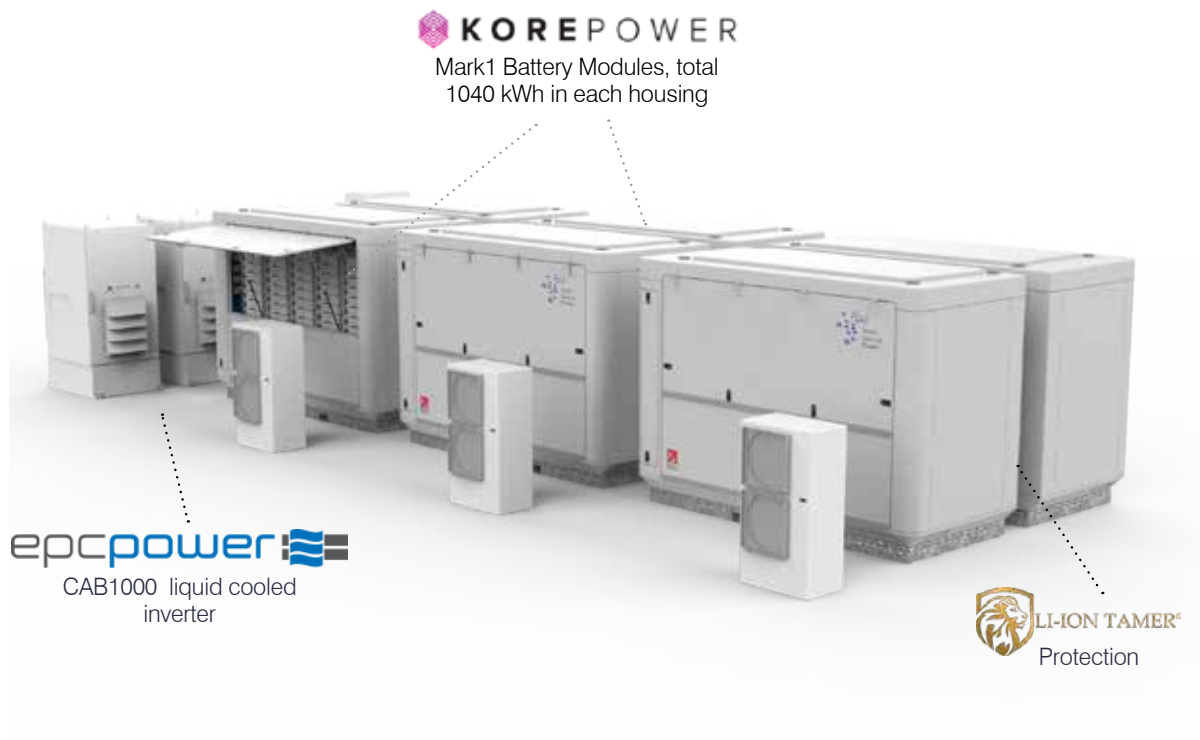
Low EPC costs



1MW inverter scalable module: 1 to 4 hours+ storage



Our **Flex-ESS1000** integrated energy storage system is a fully factory-built and tested, high-density, modular energy solution. It reduces project risk and cost thanks to its simple installation, small footprint, and lightweight construction. It also offers ultra low operating costs thanks to its enclosed cooling and IP64 housing. Integrating KORE Power Mark1 storage modules and EPC's CAB1000 inverter, **Flex-ESS1000** achieves an industry-leading, density-optimising footprint for applications where space is constrained or at a premium. Working with multiple power sources and output configurations, the **Flex-ESS1000** provides the ultimate, flexible approach for scaleable ESS applications.



## GRID SERVICES COMBINED WITH RENEWABLE GENERATION AND PPA



## Flex-ESS1000 for low cost project overheads

### INVERTER

- Reduced infrastructure & component costs
- UPS function offering protection to your facility
- Both Off & On grid-forming and following
- Peak efficiency 98.6% lowest >97%
- Outdoor housing IP64

### STORAGE

- Long lifespan with all components designed to last 5000 to 7500 cycles and 10/15/20 year lifespan
- British-engineered 10/15/20-year performance and 5-year product extendable warranty
- Maximum safety, modules certified to UL9540A
- Easily expandable flexible energy storage system can be sized according to need
- Optimised battery performance via the Master/String-Rack Controller (SRC)
- Li-ion Tamer protected

### BESS

Modular and expandable, the **FLEX-ESS1000** offers installers a plug-and-play, factory built-and-tested, solution.

The thermally insulated and ultra durable housing ensures ideal climatic conditions for the ESS. Parasitic loads are minimised by water cooling the inverter and HVAC for the KORE Mark 1 batteries results in class leading efficiencies.

- Ultra low footprint - 2.7m x 3.4m x 1.5m (HxWxD)
- Easily transported on site by forklift or Hiab
- Factory-built and tested
- Secure and ultra-durable
- Thermally optimised
- Maximum energy density
- Flexible layout options
- Plug-and-play, delivery to commissioning hours, not days
- IP 64 rated enclosure

## APPLICATION

From utility to industrial power, **FLEX-ESS1000** gives you the power you need when you need it.

- 4 quadrant operation
- Grid-forming and following
- High-performance storage by KORE Power
- Black start
- Generator hybridisation
- Ramp rate control
- Power factor correction
- Load and peak shaving
- EV Charging

With ultra-fast response bidirectional 4-quadrant operation, the **FLEX-ESS1000** system offers **ACTIVE** and **REACTIVE** power services to both industrial and commercial operators. With only the highest quality components and water cooling, the system delivers outstanding up time, minimal **OPEX** and > 20 years service life, ensuring long term reliable access to those current and future revenue streams.

- Voltage control and droop
- Power factor control
- Reactive power (VAR)
- Frequency regulation and response
- Peak shaving
- Curtailment avoidance
- Scheduled shifting or islanding
- Accurate and fast ramp rate control
- Black start and UPS
- Remote command power and operation
- 24hr automated system monitoring



**Flex-ESS1000** the perfect solution for commercial and grid utility projects

# Flex-ESS1000 Specifications

## INVERTER

AC	Power	1010 kVA   1215 ARMS
	AC Voltage	480 VRMS +10%/-12%
	Overload capacity	1.2 MW, 2 mins   1.1 MW, 5 mins
	Nominal frequency range	50-60 Hz field settable
	Power factor/reactive power	0 leading ... 0 lagging (full 4-quadrant operation)
	Max aux. power consumption	750W
	Harmonic distortion	UL1741/IEEE 1547, <2% TDDi at rated power per IEEE 519
	CEC efficiency	98.0% (>97% throughout operational range)
	Peak AC to DC efficiency	98.40%
DC	Battery DC port	1400 ADC   up to 12000 VDC
	Peak efficiency / Lowest efficiency	Space - 98.6% - 97.0%
Control	Control interface	CAN, Modbus TCP/IP
	Command latency	1 ms (CAN), 3 ms (Modbus TCP)
	Response time	>/=5 ms; adjustable via parameters
	On / off grid transitions	Yes - UPS mode available
	Black-start capable	Yes - requires external control power
	Grid-tied control modes	Voltage mode   PQ Power   DQ (current)   cos phi (pf)
	Grid-support functions	Volt/VAR   Hz/Watt   Volt/Watt
	Islanded control modes	Vf   droop control   OK to parallel with other sources
	Island overload avoidance	Active inrush limiting for starting larger loads
	Control power voltage	208 - 240 VAC
	Self-consumption:	1500W   1100W   900W (155W) Single inverter
	Max. 66% load, 30C   33% load, 30C	6000W   4400W   3600W (620W) Triple arrangement
Other	Warranty	10/15/20 years

## BES

Storage capacity	6.5 kWh	Weight (battery module)	48 kg
Voltage range	44.8 – 68.8 V	Operating temperature	-5°C - 45°C
Cells	Lithium G-NMC	RTE Efficiency	98% (upto)
Cycles @80% DOD   80% EOL   25°C ± 5°C 0.5C/0.5C	>7500	Certifications / norms	UL1973, 1998, 991 UN 38.3, IEC 62619 UL9540A, G99
Cycles @100% DOD   80% EOL   25°C ± 5°C 0.5C/0.5C	5000 (expected)	Humidity	0 - 85% (non-condensing)
Warranty	10/15/20 years		



# Flex-ESS1000 Specifications

## SYSTEM

Power	1000 kVA AC output per inverter
Storage	1040 kWh per housing
AC voltage	380/400/415/480/600 VRMS 3-phase 3-wire delta (Delta-Wye Transformer required for specific Voltage requirements, and for 4-wire distribution)
AC frequency	50-60 Hz
Communication protocol	Modbus TCP/IP (others available)
Ambient temperature (operation)	-20°C to 45°C
Shipping dimensions & weight	Storage: 2.5m x 3.4m x 1.4m (HxWxD), 11 metric tons ( <i>H&amp;W + or - 30 mm</i> ) Inverter: 2.3m x 1.0m x 1.5m (HxWxD), 1.1 metric tons
Maintenance envelope (openings etc)	Storage: 1.2m projection to front Inverter: 1.0m projection to front
Site power requirements	None, Self-powered
Warranty	10/15/20 years

# Flex-ESS1000 Controller



## MONITORING

Capable of integration with existing plant infrastructure using Industrial Ethernet communication protocols (for example Modbus TCP/IP, SCADA) for remote control and monitoring of the system from a centralised control room.

Battery health is continuously monitored via the KORE Power MS.BMS, providing real-time data of battery system health and performance. Our bespoke software allows an operator to monitor total system performance from input power source to output.

The system is also supported with remote performance monitoring for servicing and maintenance.

## SYSTEM SECURITY

Hosted on Microsoft Azure, with guaranteed uptime and security, MSP's system controller is compliant with IEC 62351 for security in energy management system and associated data exchange.

## OTHER AVAILABLE PRODUCTS

- Flex-ESS 250
- Flex-ESS 500
- Flex-EV



**continuu  
energy**



**Balancing energy  
efficiency**



**Continuu Energy Ltd**  
9 Harbour Court  
Heron Road  
Belfast BT3 9HB  
**T** +44 (0) 2890 454 900  
**E** [info@continuu-ups.com](mailto:info@continuu-ups.com)  
**W** [www.continuu-ups.com](http://www.continuu-ups.com)

 @ContinuuUPS

 Continuu Ltd

