

FLEX-ESS 250

- 250kW AC Power
100kWh to 5MWh+
of energy storage
Up to 340kW PV Power
- Market leading
power density and efficiency
- Modular for a flexible
approach to energy storage
- Reduces on site costs
for installation

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The most flexible all in one energy storage system on the market

MSP's FLEX-ESS hybrid power system is a fully-factory-built and tested, high-density, modular energy solution. It offers reduced project risk and cost thanks to its simple installation, small footprint, and lightweight construction. It also offers low operating costs thanks to its enclosed cooling and durable housing. Integrating KORE Power energy storage and our ground-breaking FLEX Inverter, FLEX-ESS achieves an industry-leading, optimising footprint for applications where space is constrained or at a premium. Working with multiple power sources and output configurations, the FLEX-ESS provides the ultimate, flexible approach for most applications.



INVERTER

- Reduced infrastructure & component costs
- Coupled giving unrivalled flexibility when sizing your solar & storage
- UPS function offering protection to your facility
- Both Off & On grid-forming and following
- Peak efficiency 98.6% lowest 97%
- Outdoor housing IP64 (indoor version available)
- Solar MPPT Hybrid Inverter

STORAGE

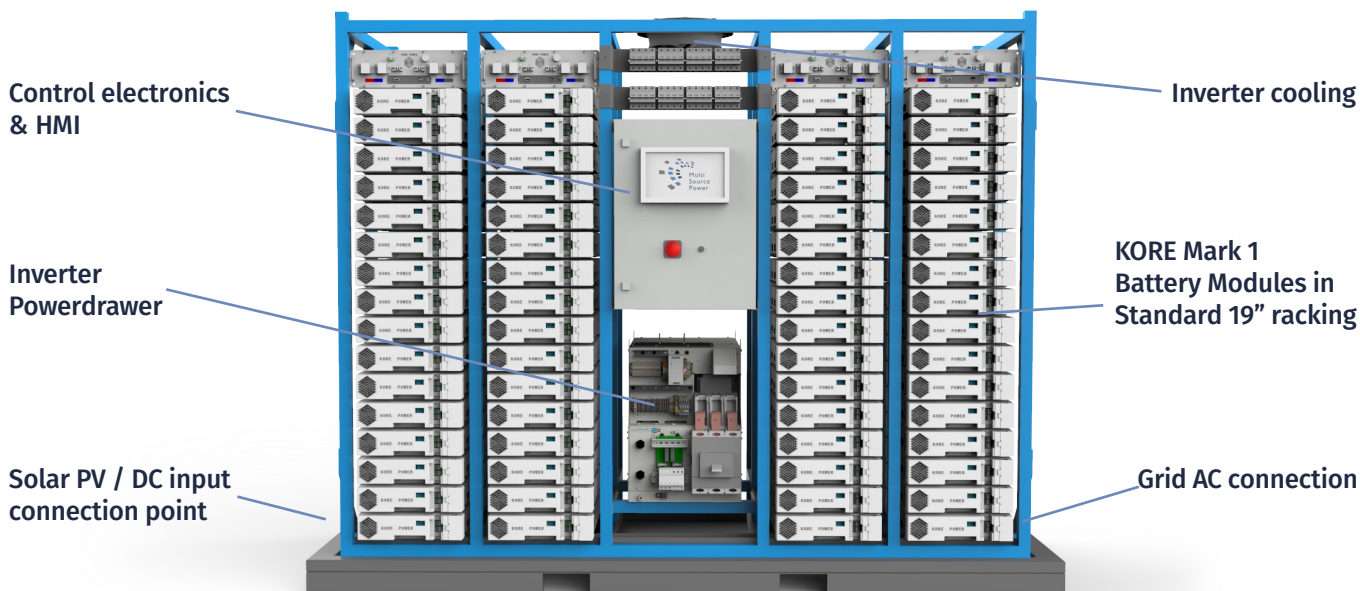
Long lifespan with all components designed are expected to last 5000 to 8000 cycles and 20 year lifespan

British engineered 10 year performance and 5 year product warranty

Maximum safety Battery cells are incredibly durable, safe, and powerful

Easily expandable Flexible energy storage system can be sized according to need

Optimised battery performance via the String-Rack Controller (SRC)



SOLAR CONFIGURATIONS

With 50kw to 340kw of solar, the FLEX-ESS offers a fully integrated DC coupled solar input offering unrivalled performance and efficiency. The DC port can also accept other DC sources; fuel cell, DC Generator, wind turbine, and hydro.

For the full spectrum of energy demands

OFF-GRID

From microgrid to industrial power, the FLEX-ESS system gives you the power you need when you need it.

With the ability to deliver 100% capacity to the AC load and still store excess solar, direct line control and optimise any fuel derived generation, keeping OPEX to a minimum and maximising revenue.

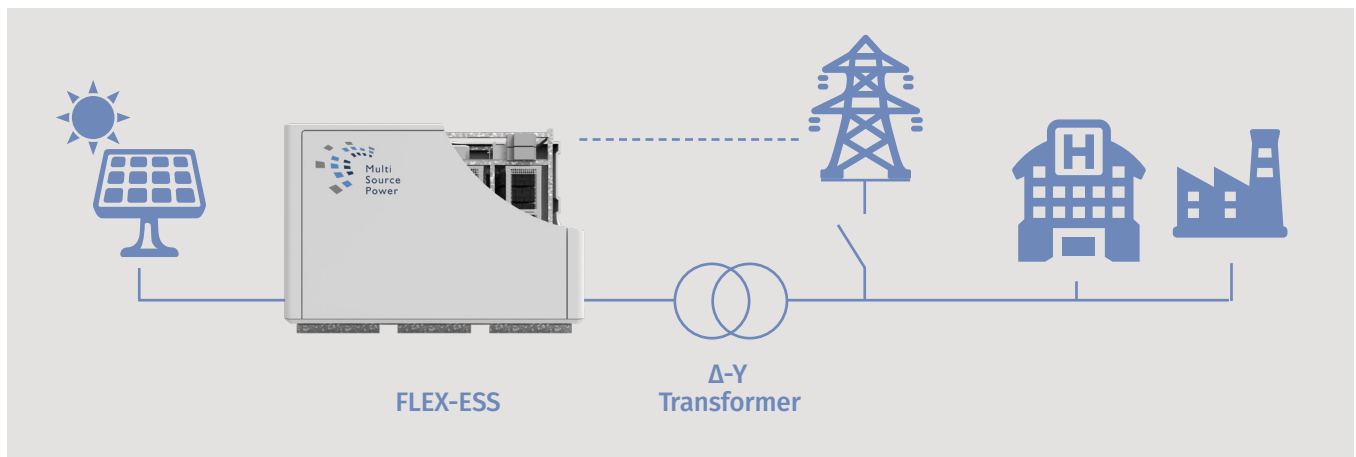
- 250 kVa Hybrid inverter
- Grid forming and following
- Integrated storage by KORE Power
- Black start
- Generator reserves displacement
- Ramp rate control
- Power factor correction
- Load and peak shaving
- EV Charging

ON-GRID/GRID SERVICES

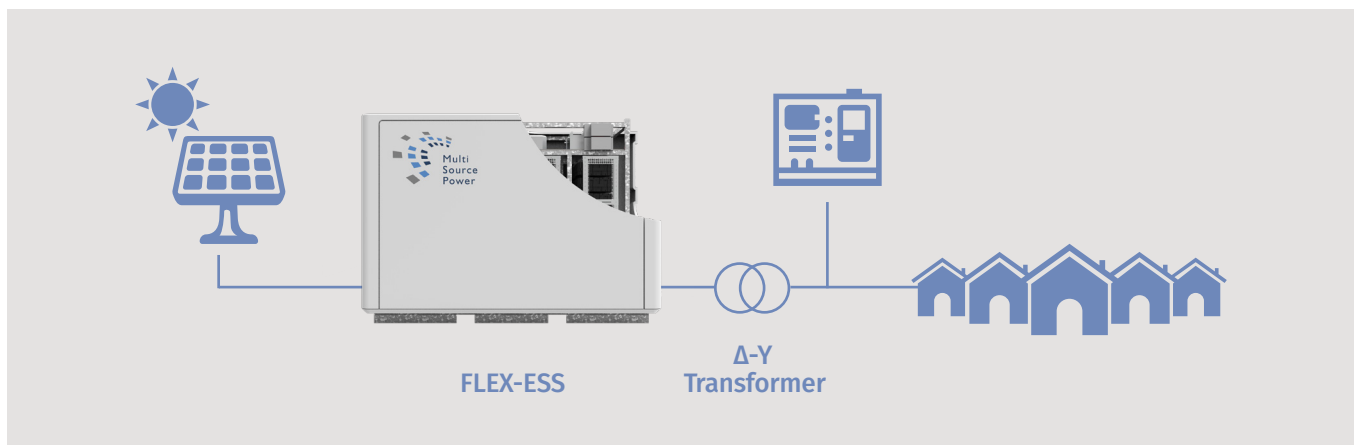
With ultra-fast response bi directional 4 quadrant operation, the FLEX-ESS system offers ACTIVE and REACTIVE power services to both industrial and commercial operators. With only the highest quality components and water cooling, the system delivers outstanding up time, minimal OPEX and > 20 years service 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
- EV Charging

On-Grid / Grid Services Applications



Off Grid Applications



Low project overheads

HOUSING SYSTEM

Modular and expandable, the FLEX-ESS offers installers a plug-and-play, factory-built-and-tested, easily-installed solution.

The thermally insulated and ultra durable housing ensures ideal climatic conditions for the EES. Parasitic loads are minimised by water cooling the power conversion technologies and, DC split air KORE Mark 1 batteries results in class leading efficiencies.

- Ultra low foot print - 2.7mx 3.4m x 1.5m (HxWxD)
- Easily transported on site by forklift or telehandler
- 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



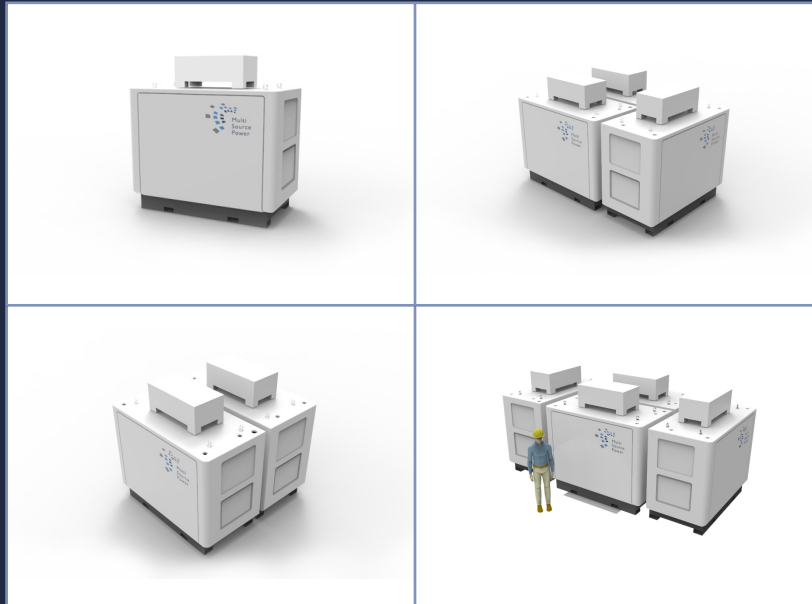
FEATURES AND BENEFITS

As well as the compact and modular design, the unit provides:

- Hybrid high-power multi-port inverter eliminates need for separate solar & storage inverters
- Market leading KORE Power energy storage
- Up to 340kW of solar energy (single unit)
- Significant reduction in OPEX and installation costs
- Grid services
- Off-grid/on-grid
- UPS/SRT/Grid bridging system
- Visually unobtrusive and available in any RAL colour
- Enabling EV charging

System configuration

The FLEX-ESS system can be paralleled to multiple MW level in a highly variable range of storage and power configurations. Each GRP housing contains 250kVA of 3 phase AC Power with blocks of 104kWh of storage to a maximum of 832kWh (double stacked). Additional 250kVA energy expansion modules are available with each box housing upto 1MWh of additional capacity, configurable as required.



With its small footprint, multi box configurations can be arranged to preserve space in limited areas and still be planning friendly or discreet installations in any colour preference.

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.

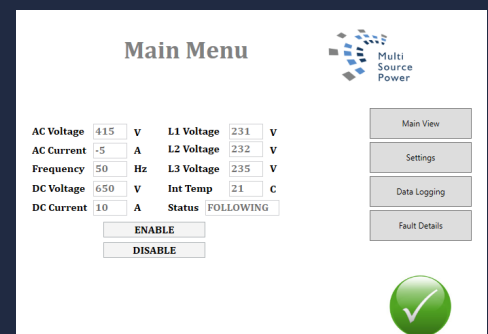
Battery health is continuously monitored via the KORE Power SRCs, providing real-time data of battery system health and performance.

MSP Technology's bespoke software allows an operator to monitor total system performance from input power source to output on the proprietary HMI screen, or remotely via Industrial Ethernet protocols.

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

System security

System is compliant with IEC 62351 - standard for security in energy management system and associated data exchange.



Product specifications

System Specification	
Power	250 kVA
Storage	104 kWh to 5MWh
Energy Expansion Storage	In 104kWh blocks upto 832kWh. Additional energy expansion boxes housing upto 1,040kWh
AC Voltage	380/400/415/480/600 VRMS 3phase 3wire 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 are available
Ambient Temperature (Operation)	-20°C to 50°C
External Dimensions (incl. Cooling pack)	2.7m x 3.4m x 1.5m (HxWxD)
Shipping Dimensions	2.3m x 3.4m x 1.5m (HxWxD). Shipping Container Transportable
Maintenance Envelope (Openings etc)	2.1m Projection towards the front of System. 0.5m at sides
Footprint (Pad) Size	3m x 1.3m
Site Power Requirements	None – system is entirely self-powered
Black Start Capability	Yes

Inverter Specification		
AC	Power	250 kVA 301 ARMS
	AC Voltage	480 VRMS +10%/-12%
	Overload Capacity	110%, 10 minutes 125%, 10 seconds
	Nominal Frequency Range	50-60Hz field settable
	Power Factor/Reactive Power	0 leading ... 0 lagging (full 4-quadrant operation)
	Max aux. Power Consumption	750W
	CEC Efficiency	98.00% (>97% throughout operational range)
	Peak AC to DC Efficiency	98.40%
DC	Battery DC Port	550ADC up to 1000 VDC 375 kW
	FLEX-ESS	372 ADC 672 – 871.5 VDC
	Solar DC Port	550 ADC 200-650VDC 250 kW
	Peak Efficiency/ Lowest Efficiency	98.6%-97%

Module Specification				
Storage Capacity	4.8 kWh	Weight (battery module)	48kg	
Voltage Range	44.8-58.1 V	Operating Temperature	-10 to 50°C	
Cells	Lithium NMC	Humidity	0 to 85% (non-condensing)	
Cycles @ 100% DoD 70% EoL 23°C ±5°C 1C/1C	5000 - 8000 (expected)	Certificates/ Norms	Cells:	IEC 62619, UL 1642, UN 38.3
			Battery System:	CE, UN 38.3, IEC 62619, IEC 61000-6-1/2/3/4, BattG 2006/66/EG
Efficiency	Up to 98%	Recycling	free take-back scheme from KORE Power	

Contact us

Tel: +44 (0)15395 62205 **Email:** info@multisourcepower.com