LS Energy Solutions

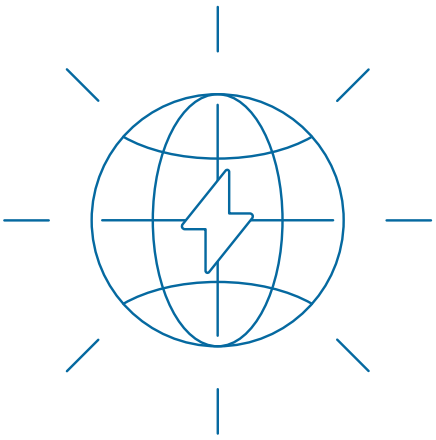
PIONEERING THE FUTURE OF ENERGY STORAGE

PowerBRiC E-series

SCALABLE BUILDING BLOCK INVERTER FOR ENERGY STORAGE

Powerful

The PowerBRiC (Bi-directional, Resilient, intelligent Converter) is the third generation of string inverters from LS Energy Solutions designed for energy storage. With industry-leading power density, the PowerBRiC offers the patented ability to parallel on both AC and DC sides, making it easily configured into any size inverter for almost any application. The PowerBRiC can operate from 200 VDC up to 1350 VDC, making it compatible with most current and future energy storage technologies. Air-cooled, the PowerBRiC can operate in environments up to 55°C/131°F (with derating), making it suitable for wide range of project sites.



Flexible

The unique PowerBRiC inverter is a cost efficient design with a compact architecture. Based on a standard 19" rack mounting configuration and front-mounted touch-safe parallel connections, integration into complete solutions is simple. The inverter can either fit into the same rack structure as most batteries or be placed in a separate rack. The PowerBRiC is designed as a string inverter, but its patented ability to be hard paralleled on both AC and DC sides allows it to be configured into a central string inverter, giving it the advantages of both central and string inverter concepts. Because PowerBRiC can be configured into the appropriate size based on the same 140kVA building block, it is suitable for both front of the meter and behind the meter applications.

PowerBRiC E-series

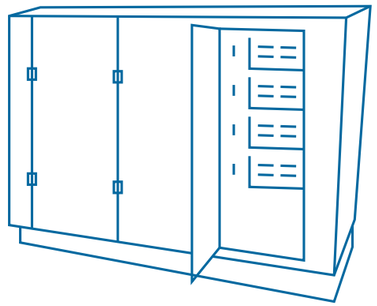
SCALABLE BUILDING BLOCK INVERTER FOR ENERGY STORAGE

LS Energy Solutions

PIONEERING THE FUTURE OF ENERGY STORAGE

PowerBRiC provides high power in a small package:

+ Industry-leading power density
+ Parallel-able on both AC and DC sides
+ Air cooled with a wide temperature range



PowerBRiC offers high flexibility:

+ Fits in standard 19” rack with easy integration into a complete solution
+ Configurable as a Central inverter or String inverter

PowerBRiC enables enhanced safety:

+ Equipped with automotive style touch safe power connectors
+ The PowerBRiC central string design topology allows for proper and flexible branch short circuit protection matching with any type of DC source (e.g. batteries)
+ 140kVA building block enables right sizing to desired energy building block (no need to oversize)
+ Can be used with off-the-shelf branch circuit protection (fuses, breakers etc.) that are widely available and often more economical than a central inverter

Safe

Our PowerBRiC design allows the configuration of multiple DC busses while the AC side of the associated inverters remain paralleled at a high AC output. The result is manageable DC circuit currents - enhancing safety and enabling the use of readily available and reasonably priced DC protection devices.

Cost efficient

A fundamental feature of the PowerBRiC is the ability to right-size inverter systems by paralleling multiple, independent 140-kVA string inverters. We call this a central string design, and configurations up to 3 MW are possible. The power requirements of a specific application can be easily matched by configuring only the necessary 140-kVA BRiCs. A key benefit is not paying for excess inverter capacity. The design also expands future battery augmentation options. Open rack locations can be created to allow for future BRiC additions. And different vintage batteries could be operating on the separate DC busses behind the same inverter.

Smart

The PowerBRiC inverter comes equipped with a wide range of advanced control functionality including full circle 360 degrees real and reactive power control. It can do both Grid Following as well as Grid Forming, making it suitable for use in Microgrid applications. Ethernet Modbus TCP and master/slave BRiC high speed synchronization communications comes standard. Operational Redundancy supported through automatic parallel power stack de-rating and master module assignment.

Applications

The PowerBRiC is suitable for both behind the meter and front of the meter applications:

+ Microgrid and Back up power
+ Black Start
+ Ability to transfer from Grid Following to Forming and back
+ Frequency regulation and ancillary services
+ Peak shaving
+ Solar + storage

...and more

PowerBRiC E-series

SCALABLE BUILDING BLOCK INVERTER FOR ENERGY STORAGE

LS Energy Solutions

PIONEERING THE FUTURE OF ENERGY STORAGE

CONFIGURATION	400 VAC VARIANT	480 VAC VARIANT	600 VAC VARIANT
Input Data: (DC Interface)			
Operating Voltage range	620-1150 VDC	720-1150 VDC	900-1350 VDC
DC pre-charge	Selectable as option		
Output Data: (Grid Interface)			
Rated AC Output Voltage (+/- 10%)	400 VAC	480 VAC	600 VAC
Rated AC output VA (At +45°C, nominal VAC)	116 kVA	140 kVA	140kVA
Rated AC Amps	168 Amps AC	168 Amps AC	134 Amps AC
Overload capability	120% for 10 seconds		
Grid Frequency	50 / 60 Hz (±5%)		
Aux Control Power	24VDC, 300VA. PowerBric separates the aux fan power from the control power. This will allow connection of the control power to a UPS to keep the communications and control platform operational during power outages (required for black start operation) which will also provide inverter DC/AC power and health monitoring telemetry		
Local User Interface:			
Comms Ports	Modbus TCP CAT 5. High speed inverter to inverter communications and precise synchronization during grid following or forming operating modes		
Remote Interface:			
Remote Comm.	Modbus TCP		
Inverter Power Termination:			
	Touch Safe lug type termination standard		
Mechanical:			
Ingress protection	Nema 1 / IP20 (Indoor)		
Ambient temp. range, operating	-20°C to 55°C (Power Derate 2%/°C above 45°C. 90% power at 50°C, 80% power at 55°C)		
Dimensions	483mm (W) x 263mm (H) x 843mm (D) (19" x 10.4" x 33.2")		
Weight	100kg (220lbs)		
Standards compliance:			
	IEEE 1547, UL1741- SA including CA Rule 21 and HECO Rule 14H, CSA (CE - IEC 62109-1 (LVD of IEC), CSA - 22.2, Australia - AS4777.2)*		

*pending

9201 Forsyth Park Dr., Charlotte, NC 28273 | 980-221-0654 | www.ls-es.com