CanadianSolar

SolBank

Energy Storage System

S-2967-2h|S-2967-4h

Canadian Solar SolBank is a modular, flexible, and cost-effective MWh-scale battery energy storage system. Multiple SolBanks could be connected in parallel. This product is designed to meet energy storage needs for today and for the future.

KEY FEATURES

- Cost-effective and long service life
- 280Ah LFP cell leads to high energy density
- Active balancing BMS on pack and rack level, releases more energy and extends the life of the system
- Liquid cooling technology with cell temperatures being controlled within the optimal operating range
- Battery pack IP65 seal grade, avoid dust, moisture, and water condensation
- Multi-stage thermal spread technology, effectively prevents battery heat spread and improves safety
- Multi-level fire detection, monitor early thermal runaway of cells
- All internal components including battery packs assembled in factory, reducing on-site installation costs

PRODUCT CERTIFICATES*

UL1973, UL9540, UL9540A, UN38.3 / UN3536

*The specific certificates applicable to each market, and not all certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates applicable in the regions in which the products will be used.

CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 20 years, it has successfully delivered over 67 GW of premium-quality solar modules across the world.

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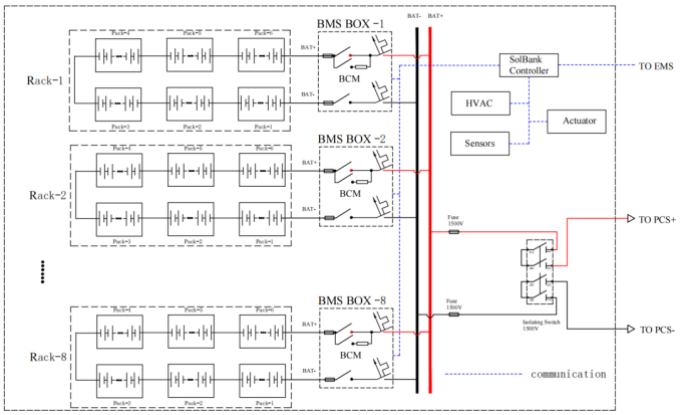
CIRCUIT DIAGRAM



SYSTEM PARAMETER

	S1K51K3A01 (CSI-SolBank-S-2967-2h-US)	S1K5650A01 (CSI-SolBank-S-2967-4h-US)
Battery Chemistry	Lithium Iron Phosphate (LFP)	
Pack Configuration	1P69S (69 Cells)	
Rack Configuration	1P414S (6 Packs)	
System Configuration	8P414S (8 Racks)	
DC Voltage (Nominal)	1324.8 V	
DC Voltage Range[1]	1159.2 V ~ 1490.4 V	
Rated DC Power[2]	1375 kW	700 kW
Usable Energy Capacity (FAT)[3]	2750 kWh	2800 kWh
Max. Short Circuit Current	75 kA	70 kA
Charging/Discharging Mode	0.5 P / 0.5 P	0.25 P / 0.25 P
Duration @Rated Power	2 hrs	4 hrs
DC Round Trip Efficiency (RTE)[4]	≥ 92%	≥ 94%
Aux Load (Standby/Peak)	1.25 kVA / 30 kVA	1.25 kVA / 20 kVA
Auxiliary Power Interface	AC480 V / 60 Hz, 3P5W	
Thermal Management System	Liquid cooling/heating for battery system, air cooling for electrical components and humidity control	
Control Backup	2-hrs UPS for control system including BMS, installed in the container	
Operating Temperature (Ambient)	-30 °C to 55 °C	
Relative Humidity	≤95% (non-condensing)	
Communication Interface	Ethernet / RS485 / CAN	
Communication Protocol	Modbus TCP / Modbus RTU / CAN 2.0	
Certifications	UL1973, UL9540, UL9540A, UN38.3 / UN3536	
Design Standards/Codes	NFPA69, NFPA70, NFPA855,, IEC62619	
Enclosure	20ft. high-cube container	
Dimensions (L*W*H)	6058*2438*2896 mm (238.50*95.98*114.02 in)	
Weight (Battery Included)	29,800 kg (65,700 lbs)	
Altitude	< 2000 m (derating between 2000 m ~ 4000 m)	
Enclosure Ingress Rating	IP55 / NEMA 3R	
Painting/Coating	RAL9003	
Seismic Parameter	Zone 4	
Noise @1m distance	≤ 75 dB	
Fire Detection and Alarm	Heat and smoke detection, alarm panel, bell and strobe with up to 24 hours UPS backup	
Explosion Prevention	Gas detection with active ventilation	
Fire Suppression	Aerosol-based fire suppression system option available	
Emergency Stop/Shut-off	Local and remote	

1. Unit is rated at 1159.2V~1490.4V for optimized product performance, maximum voltage range value for battery system is 1055.7V~1490.4V
2. The rated operating power of a single unit subject to a maximum of 3 units connected in parallel
3. Usable Energy Capacity is measured at FAT, Contact CSI for an estimate of Usable Energy Capacity at COD
4. RTE is measured with rated DC Power for full cycle at BOL, refer to the warranty document for complete procedure

* The technical parameters contained in this technical data document may deviate slightly, and Canadian Solar does not guarantee that they are completely accurate. Due to continuous innovation, research and development and product improvement, Canadian Solar reserves the right to adjust the information in this technical parameter document at any time without prior notice. The customer should obtain the latest version of the technical parameter document when signing the contract and make it an integral part of the binding contract signed by both parties.

PARTNER SECTION

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e-STORAGE
A subsidiary of Canadian Solar

SolBank 2.0

Energy Storage System

S-3328-2h-NA | S-3328-4h-NA

e-STORAGE is a leading company specializing in the design, manufacturing, and integration of battery energy storage systems for utility-scale applications. At the core of the e-STORAGE platform is SolBank, a self-manufactured, lithium-iron phosphate chemistry-based battery engineered for utility-scale applications.

Through our innovative solutions, we aim to optimize grid operations, promote clean energy integration, and foster a more resilient and sustainable energy landscape.

Together, we are building a brighter, greener future for all.

e-STORAGE SolBank 2.0 is a modular, flexible, and cost-effective battery energy storage product. Multiple units could be connected in parallel. SolBank 2.0 is designed to meet energy storage needs for today and for the future.

PRODUCT CERTIFICATES*

UL1973, UL9540, UL9540A, UN38.3 / UN3536

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KEY FEATURES

- Cost-effective and long service life
- 314Ah LFP cell leads to high energy density
- Active balancing BMS on pack and rack level, releases more energy and extends the life of the system
- Liquid cooling technology with cell temperatures being controlled within the optimal operating range
- Battery pack IP65 seal grade, avoid dust, moisture, and water condensation
- Multi-stage thermal spread technology, effectively prevents battery heat spread and improves safety
- Multi-level fire detection, monitor early thermal runaway of cells
- All internal components including battery packs assembled in factory, reducing on-site installation costs

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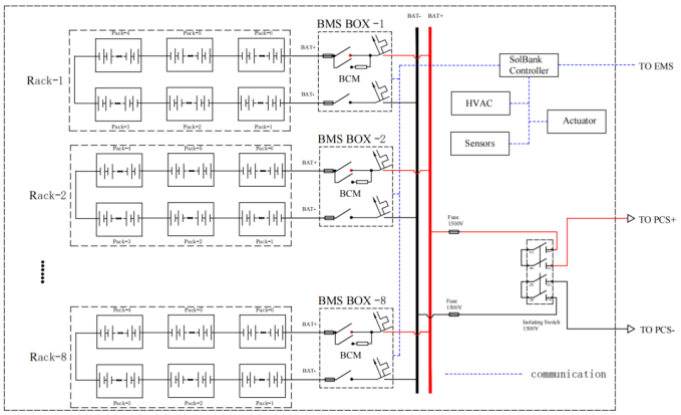
CIRCUIT DIAGRAM



SYSTEM PARAMETER

	CSI-SolBank-S-3328-2h-NA	CSI-SolBank-S-3328-4h-NA
Battery Chemistry	Lithium Iron Phosphate (LFP)	
Pack Configuration	1P69S (69 Cells)	
Rack Configuration	1P414S (6 Packs)	
System Configuration	8P414S (8 Racks)	
DC Voltage (Nominal)	1324.8 V	
DC Voltage Range[1]	1159.2 V ~ 1490.4 V	
Rated DC Power[2]	1545 kW	780 kW
Usable Energy Capacity (FAT)[3]	3095 kWh	3130 kWh
Max. Short Circuit Current	75 kA	70 kA
Charging/Discharging Mode	0.5 P / 0.5 P	0.25 P / 0.25 P
Duration @Rated Power	2 hrs	4 hrs
DC Round Trip Efficiency (RTE)[4]	93%	94%
Aux Load (Standby/Peak)	1.25 kVA / 30 kVA	1.25 kVA / 20 kVA
Auxiliary Power Interface	AC480 V / 60 Hz, 3P5W	
Thermal Management System	Liquid cooling/heating for battery system, air cooling for electrical components and humidity control	
Control Backup	2-hrs UPS for control system including BMS, installed in the container	
Operating Temperature (Ambient)	-30 °C to 55 °C	
Relative Humidity	≤95% (non-condensing)	
Communication Interface	Ethernet, RS485, CAN	
Communication Protocol	Modbus TCP/IP, Modbus RTU, CAN 2.0	
Certifications	UL1973, UL9540, UL9540A, UN38.3/UN3536	
Design Standards/Codes	NFPA69, NFPA70, NFPA855, IEC62619	
Enclosure	20ft. high-cube container	
Dimensions (L*W*H)	6058*2438*2896 mm (238.50*95.98*114.02 in)	
Weight (Battery Included)	30,200 kg (66,580 lbs)	
Altitude	≤ 2000 m (derating between 2000 m and 4000 m)	
Enclosure Ingress Rating	IP55 / NEMA 3R	
Painting/Coating	RAL9003	
Seismic Parameter	Zone 4	
Noise Level	≤ 75 dB @1m distance	
Fire Detection and Alarm	Fire alarm panel, heat and smoke detection, alarm bell and strobe with 24 hours UPS backup	
Explosion Prevention	Combustible gas detection with active ventilation	
Fire Suppression	Optional aerosol-based suppression system, dry pipe suppression system	
Emergency Stop/Shut-off	Local and remote	

1. Unit is rated at 1159.2V~1490.4V for optimized product performance, maximum voltage range for battery system is 1055.7V~1490.4V
2. The rated operating power of a single unit subject to a maximum of 3 units connected in parallel
3. Usable Energy Capacity is measured at FAT, contact e-STORAGE for estimate at COD
4. RTE is measured with rated DC Power for full cycle at BOL, refer to the warranty document for complete procedure

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e-STORAGE

A subsidiary of Canadian Solar

UTILITY-SCALE ENERGY STORAGE

Storage Block

ENERGY STORAGE SYSTEM

S-5016-2H-EU|S-5016-4H-EU

Capacity: 5.0 MWh

e-STORAGE, a subsidiary of **Canadian Solar**, is a world-class energy storage solution provider, specializing in storage system design, manufacturing, and integration of battery energy storage systems for utility-scale applications.

The company offers value-added system consulting and turnkey EPC services, in addition, we provide customers with our proprietary LFP battery solution SolBank.

Together, we are building a brighter, greener future for all.

Storage Block 3.0 Highlights

- **Cutting-Edge Technology**: Storage Block 3.0 features high-density LFP cells, an active balancing BMS, and an innovative liquid cooling TMS, ensuring optimal safety.

- **Compliance and Certifications**: Storage Block 3.0 adheres to all industry standards: IEC 62619, IEC 63056, IEC 62477-1, IEC 62933-5-2, IEC 61000-6-2, UL 9540A, NFPA 855, NFPA 69, UN38.3/UN3536, ensuring rigorous safety and performance criteria.

Key Features

Enhanced Energy Density

- Utilizes 314 Ah battery cells and compact integration, increases single container energy density up to 45%
- Reduces land cost by up to 35% in a 100MWh project

Safety

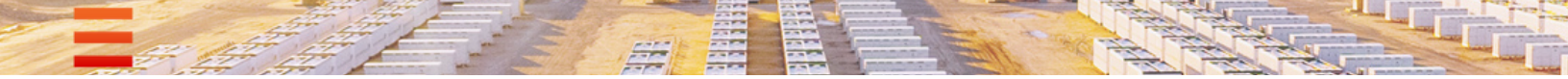
- IP67-rated pack design
- Up to 20% faster detection of abnormal and automatic protection
- Advanced pack thermal isolation, electrical redundancy protection, and multi-level fire protection, effectively minimize potential issues

Intelligent Control

- Liquid cooling cuts auxiliary consumption up to 30%
- Active balance and string-level management, guarantee high efficiency and availability

Compatibility & Installation

- Supports various PCS topologies
- Turn-key integration and stationery certification, reduce project schedule risks by up to 40%
- Plug-and-play setup for streamlined commissioning



Storage Block 3.0
System Parameter

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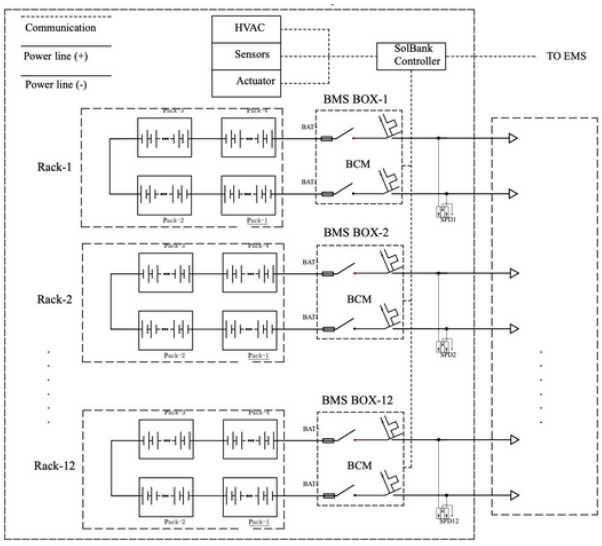
General	
Product Model	CSI-SolBank-S-5016-2h-EU
	CSI-SolBank-S-5016-4h-EU
Battery Chemistry	Lithium Iron Phosphate (LFP)
Pack Configuration	1P104S (104 Cells)
Rack Configuration	1P416S (4 Packs)
System Configuration	12P416S (12 Racks)
Nominal DC Voltage	1331.2 V
Operation DC Voltage Range	1164.8 V ~ 1497.6 V

Performance		
Rated DC Power	2350 kW	1200 kW
Initial Storage Capacity	4700 kWh	4800 kWh
Charging/Discharging Mode	0.5 P / 0.5 P	0.25 P / 0.25 P
Duration @Rated Power	2hrs	4hrs
Round Trip Efficiency (RTE)	93%	94%
Max. Short Circuit Current	10 kA*12	10 kA*12

Storage Block 3.0
Circuit Diagram



Aux Systems	
Auxiliary Power Interface	AC400 V / 50 Hz, 3P5W
Thermal Management System	Smart liquid cooling/heating for battery system
Aux Load (Standby/Peak)	1.5 kVA / 50 kVA
	1.5 kVA / 22 kVA
Operating Temperature (Ambient)	-30 °C to 55 °C (derating from 45°C to 55°C)
Relative Humidity	≤95% (non-condensing)
Altitude	< 2000 m (derating from 2000 m to 4000 m)
External Communication Interface	Ethernet connection, Modbus TCP/IP protocol

Safety	
Fire Detection and Alarm	Fire alarm panel, heat and smoke detection, alarm bell and strobe
Explosion Prevention	Combustible gas detector with active ventilation
Uninterrupted Power Reserve	Container level UPS for 2-hr control system backup; dedicated fire safety UPS for 24-hr fire alarm backup
Fire Suppression Options	Aerosol-based suppression system. Dry pipe sprinkler system.
Emergency Stop/Automatic Shut-off	Local and Remote

Mechanical	
Enclosure	20ft. high-cube container
Dimensions (L*W*H)	6058*2438*2896 mm (238.50*95.98*114.02 in)
Weight (Battery Included)	43,000 kg (94,800 lbs)
Enclosure Ingress Rating	IP55 / NEMA 3R
Painting/Coating	RAL9003 / C4 Coating
Seismic Parameter	Zone 4
Noise @1m distance	≤ 75 dB @1m distance

Notes

1. The unit is rated at 1164.8V~1497.6V for optimized product performance, the maximum voltage range for the battery system is 1060.8V~1497.6V
2. Rated DC Power is measured at the product DC terminal, the Rated DC Power and Initial Storage Capacity is limited to the use of two Storage Block 3.0 units connected in parallel
3. Initial Storage Capacity is the usable product capacity at FAT, contact e-STORAGE for capacity at COD per project schedule
4. DC RTE is measured during capacity test at Rated DC Power, refer to the product warranty document for the complete procedure

Due to ongoing innovation, improvements, and product enhancements, the technical specifications in this document are subject to change and are not guaranteed.
Canadian Solar reserves the right to update or change its products or this technical data without prior notice and customers should not rely upon these or any technical specifications which are not made part of a definitive binding agreement.

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