Specification

The LG ESS is provided as an integrated energy storage system, complete with PCS, ATS and Energy Meter. In the case of a DC-coupled system, RSD will also be included. For either the AC or DC-coupled system, a second battery pack is optional.

LG ESS PCS

Primary Battery

Auto-Transfer Switch

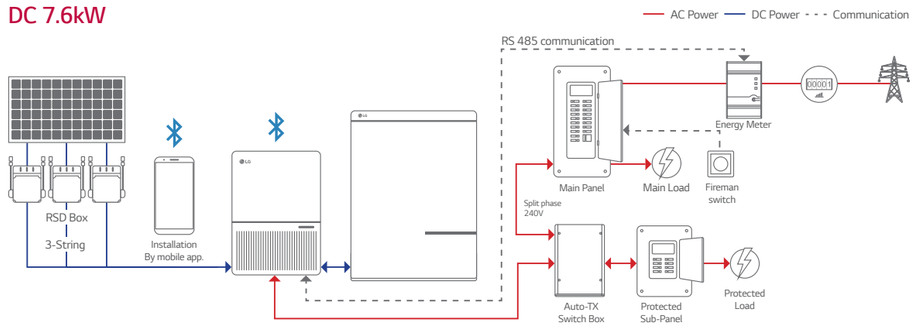
Energy Meter

Rapid
Shutdown Box
for NEC 2014

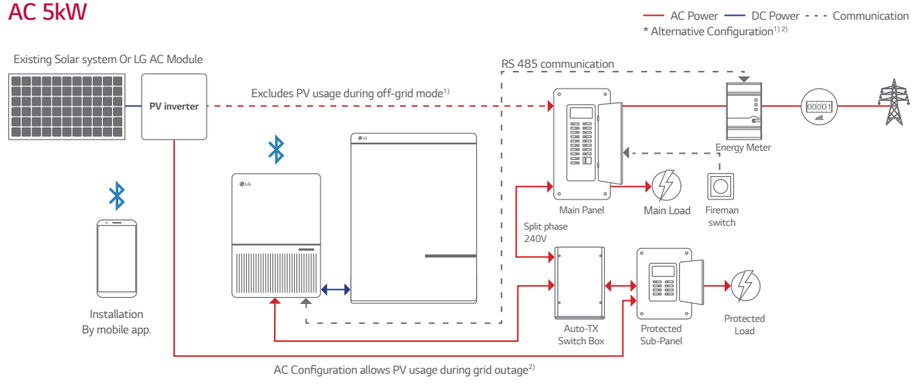
Secondary Battery

The LG ESS is offered as both an AC-coupled solution and a DC-coupled solution. The 7.6kW DC-coupled product offers unparalleled solar + storage performance, allowing homeowners to seamlessly store excess solar energy to power their home both day and night. The 5kW AC-coupled product can be easily added to an existing solar system, offering a reliable and cost-effective way to manage Time of Use (TOU) rates and provide backup power.

DC 7.6kW



AC 5kW



Contact

Jan Dominguez | ESS Sales Engineer
LG Electronics USA Inc.
910 Sylvan Avenue, Englewood Cliffs, NJ 07632
O : (201).408.9065 | jan.dominguez@lge.com

The LG ESS

The Evolution of Home Energy Storage

10 yrs Warranty

The LG Electronics ESS is a state-of-the-art home energy management system designed for homeowners ready to take control of their home energy usage. The LG ESS is offered in both an AC-coupled and DC-coupled configuration. The 7.6kW DC-coupled solution with an integrated high efficiency PV inverter is well suited for new solar PV + storage installations. The 5kW AC-coupled solution is ideal for customers looking to install an ESS in a home with an existing solar system.
The 7.6kW DC-coupled product offers unparalleled solar + storage performance, allowing homeowners to seamlessly store excess solar energy to power their home both day and night. The 5kW AC-coupled product can be easily added to an existing solar system, offering a reliable and cost-effective way to manage Time of Use (TOU) rates and provide backup power.
Product features include quick and easy installation, a compact and elegant design, and an integrated smart energy management system (EMS). The EMS enables customers to control their electric bill through self-consumption of solar and TOU rate smart scheduling, and includes an off-grid mode to protect the customer's home in the event of a power outage.

Features at a glance

Easy Two-Person Installation

All required components included for complete install ; Painless commissioning via Auto Self-Check

High Efficiency PCS

Achieving 97.5% CEC Efficiency ;
Multi-String & MPPTs for multi-angled roof

Extremely Reliable Battery and Scalable

Up to 19.6kWh for longer back-up time ;
Compatible with LG Chem RESU 10H

Smart Energy Management and Remote System Monitoring

Emergency Back-up ; 24-7 energy monitoring

One-stop service & 10-Year Warranty

ESS can be paired with LG PV modules for a single provider for all warranty issues

Back-up Mode Solar Capabilities

Solar modules may power your home and charge your battery during a grid outage

Specification

Power Conversion System

PV Input

	LG AC 5kW	LG DC 7.6kW
Model Name	A005KEEN261	D007KEEN261
Absolute Maximum Input Voltage	N/A	450 V DC
Start-up Voltage		120 V DC
Operational DC Voltage Range		50 - 450 V DC
Full Power MPPT Range		270 - 450 V DC
Maximum Current per MPPT		12 A DC
MPP Tracker		3
MPPT Scan (Shading Option)		15min (high) / - 30min (default) / - 60min (low) Full range scan take less than 5s
MPPT Efficiency		>99.6% (Static), >99.3% (Dynamic)
DC Disconnect		Integrated
Input Terminal		Spring Type

Battery Input / Output

Compatible Battery Pack Size	9.8 to 19.6 kWh @77°F(25°C) Max. 2 in parallel	
Rated I/O Power	5000 W	5000 W
Peak I/O Power(10 sec)	6000 W	7000 W
Acceptable Input Voltage Range	Charge/DisCharge : 400 - 450 V DC / 350 - 430 V DC	
Rated I/O Current	Max. Charge/Discharge Current : 11.9 A@420 V / 14.3 A@350 V	
Peak I/O Current (10 sec)	18.9 A@370 V	
Cycle Efficiency Charging to Discharging (PCS Only)	Peak > 95 %	
DC Disconnect	Internal	
Fuse Rating	30 A	
Battery Terminal	Spring Type	

AC Output (On-Grid Mode)

Maximum Output Power	5000 W	8000 W
Grid Voltage Range	a) 240 V AC +10%/-12%, (L-L) b) 208 V AC +10%/-12%, (L-L)	
Maximum AC Current	24 A AC	32 A AC
Frequency Range	59.3 - 60.5 Hz	
Power Factor	Cos phi = 0.85c - 0.85i Adjustable	
Harmonics Distortion	THD < 3%	
Grid support compliance	UL 1741 SA, CA Rule 21, HECO	
Revinue Grade Meter	Optional	Built-in RGM
Output Terminal	Spring Type	

* Complies with ANSI C12.20

AC Output (Off-Grid Mode)

Output	Pure Sin-wave Voltage
Maximum Output Power	5000 W
Peak Output Power (10 sec)	6000 W
AC Output Voltage Range	240 V AC
Maximum AC current	21 A
Peak AC Current (10 sec)	25 A
Frequency Range	59.3 - 60.5 Hz
Voltage Harmonics Distortion @ 100% resistor load	THD < 5%
Maximum allowed Crest Factor	2.5 @5000W

General PV to AC

	LG AC 5kW	LG DC 7.6kW
Isolation Level	Transformer-less	
Type of Converter	DC/AC	
CEC Efficiency	N/A	97.50%
Operating Temperature	-22 °F to 149 °F/ -30 - 65 ℃	
De-rating Start Temp.	Higher than 113F (45 ℃)	
Humidity	0 - 95%	
Maximum Operating Altitude	3000m above sea level De-rating above 2000m	
Audible Noise	< 40 dBA @ 1m	
MTBF	>500k hrs Calculated Acc. MIL Handbook	

Mechanical Design

Dimensions (W*L*H)	425 X 590 X 150 [mm]
Weight	21 kg / 46.3 lb
Cooling	Natural Convection
Enclosure Material	Aluminum Alloy
Installation Type	Wall Mount, Horizontal support Indoor and Outdoor
Enclosure Protection	NEMA Type 4
Warranty	10 years

Interface

Indicator	5 LEDs
Protocol	Modbus (SunSpec)
Ethernet (optional)	Standard (IPv4, IP6 Supported)
Human Machine Interface (HMI)	BLE (Support 4.0 or higher) Settings can be done through APP from Mobile phone
Remote Diagnose/Monitoring	Bi-direction Through Cloud
Remote Firmware Update	Through Cloud (Optional)
Rapid Shutdown System	Integrated

Accessory

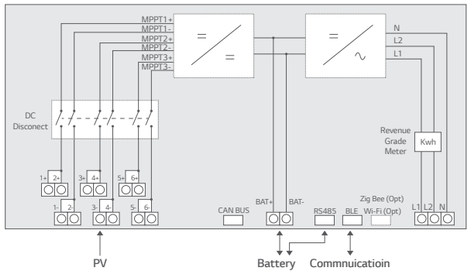
Rapid Shutdown Box	-	Offered by LG Electronics
Energy Meter	Offered by LG Electronics	
Auto-Transfer Switch	Offered by LG Electronics	

Standards

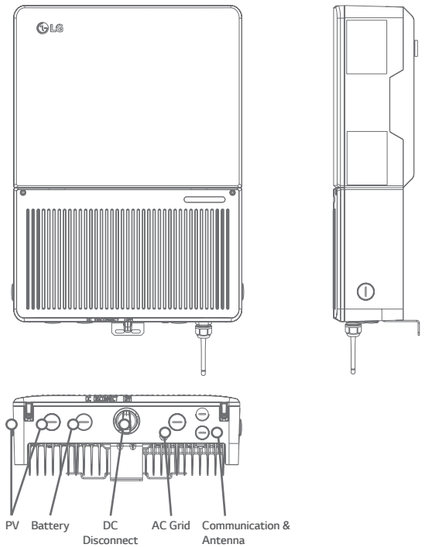
Safety Mark	CSA
General Safety	UL1741, CSA 22.2 No. 107-01
Software Safety	UL1998
Grounding Fault Detection	UL1741 CRD, NEC 2014 Article 690.35
Anti-islanding Protection	IEEE1547, IEEE1547.1
EMC	FCC part 15 Class B
AFCI	UL1699B (Type 1), NEC 2014 690.11
Integrated meter	ANSI C12.20 (meets 0.5% accuracy)
Grid support regulation	California Rule 21 , HECO Compliant

LG PCS and Battery

The Block diagram of LG PCS



Mechanical drawing and cable ports



Battery

Electrical Characteristics

Total Energy Capacity	9.8 kWh@25°C (77°F), 100% State of Energy	
Usable Energy Capacity[1]	9.3 kWh	
Voltage Range	Charge	400 to 450 VDC
	Discharge	350 to 430 VDC
Absolute Max. Voltage	520VDC	
Max. Charge/Discharge Current	11.9A@420V / 14.3A@350V	
Max. Charge/Discharge Power[2]	5kW	
Peak Power[3] (only discharging)	7kW for 10 sec.	
Peak Current (only discharging)	18.9A@370V for 10 sec.	
Communication Interface	RS485	
DC Disconnect	Circuit Breaker	
Connection Method	Spring Type Connector	
User interface	LEDs for Normal and Fault operation	

Operating Conditions

Installation Location	Indoor / Outdoor (Wall-Mounted)
Operating Temperature	14 to 113°F (-10 to 45°C)
Operating Temperature (Recommended)	59 to 86°F (15 to 30°C)
Storage Temperature -22 to 131°F (-30 to 55°C)	-22 to 131°F (-30 to 55°C)
Humidity	5% to 95%
Altitude	Max. 6,562ft (2,000m)
Cooling Strategy	Natural Convection

Certification

Safety	Cell	UL1642
	Battery Pack	UL1973 / CE / RCM / TUV(IEC 62619)
Emissions	FCC	
Hazardous Materials Clssification	Class 9	
Transportation	UN38.8	
Ingress Rating	IP 55	

1) Value for Battery Cell Only (Depth of Discharge 95%).
2) LG Chem recommends 3kW for maximum battery lifetime.
3) Peak current excludes repeated short duration (less than 10 sec. of current pattern).

Battery Expansion

LG Home Energy Storage System can connect RESU 10H battery up to 2 ea without additional battery expansion kit.