



# Lunar System

## Specifications



# Lunar Battery

Lunar Battery (AC ESS) is a fully-integrated solar battery system. It includes a hybrid inverter converts both solar and battery energy to power homes, and offers a range of energy storage capacity options. Lunar Battery can be further expanded with DC ESS units, bringing 24/7 reliable clean energy to homes of all sizes. Key features include:

- Seamless multi-day backup power with dynamic load control
- Flexible DC and AC-coupling with new and existing solar systems
- Stunningly compact design that fits easily in any home
- Lunar AI to optimize solar self-consumption, utility bill savings and VPP revenue

System	10 kWh	15 kWh	20 kWh	25 kWh	30 kWh
Model Number	L2-ESS-10KWH	L2-ESS-15KWH	L2-ESS-20KWH	L2-ESS-20KWH*	L2-ESS-20KWH*
DC Expansion				(1) LE-DC-UNIT	(2) LE-DC-UNIT
Aggregate Energy	10 kWh	15 kWh	20 kWh	25 kWh	30 kWh
Maximum Continuous AC Power	9.6 kW full sun 5 kW no sun	9.6 kW full sun 7.5 kW no sun	9.6 kW Full sun and no sun	9.6 kW Full sun and no sun	9.6 kW Full sun and no sun
Max Load Start Capability <sup>†</sup>	80 LRA	100 LRA	134 LRA	134 LRA	134 LRA
Solar Configuration	DC-coupled and AC-coupled				
Customer Interface	Customer App, Installer App, Gridshare Fleet Portal, APIs, LEDs				
Operating Modes	Lunar AI, Solar Self-Consumption, Time-of-use, Backup				
Advanced Software Features	Outage Watch, VPP enabled, load control				
Communication	Wi-Fi (2.4 GHz), 4G/LTE (CAT M1), Ethernet				
Warranty	12.5 Years 38 MWh AC throughput	12.5 Years 56 MWh AC throughput	12.5 Years 75 MWh AC throughput	12.5 year 94 MWh AC throughput	12.5 years 113 MWh AC throughput

\* L2-ESS-20KWH AC-ESS is use with up to two (2) DC Expansion Units, Model LE-DC-UNIT. When used with the expansion units, the total system capacity may increase to 25 kWh and 30 kWh.

<sup>†</sup> Subject to base load and SOC at time of motor start.

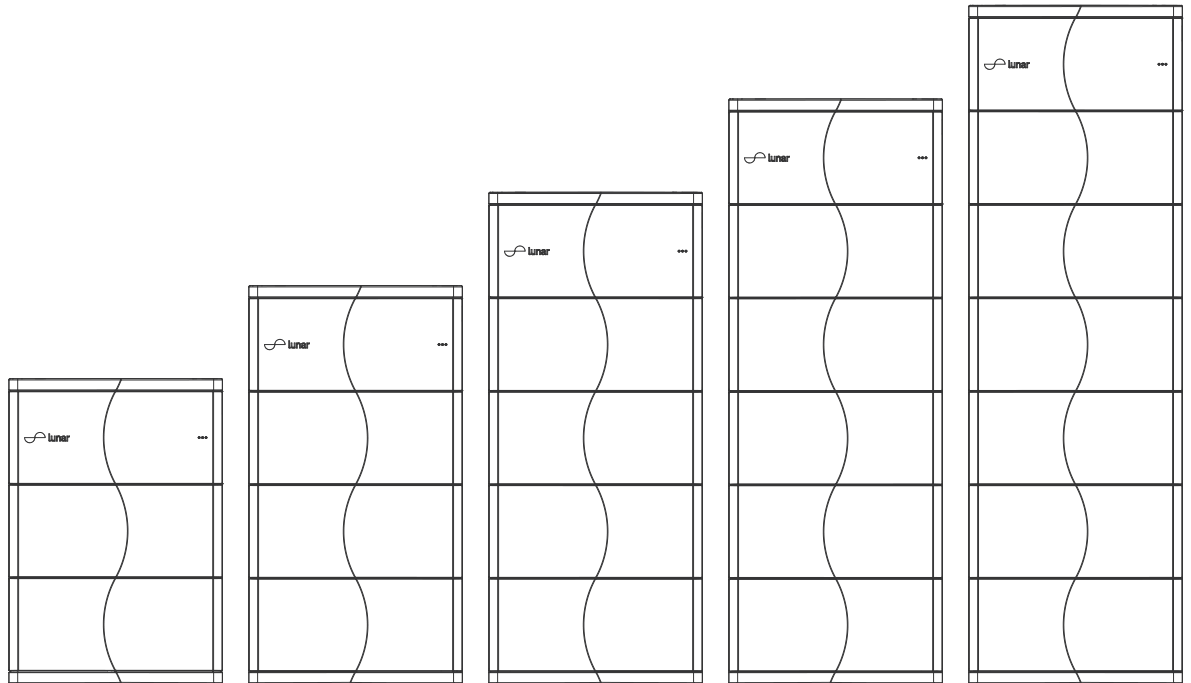
## Inverter

Model Number	10-005025
Nominal Voltage	120/240 Vac Split Phase
Grid Frequency	60 Hz
Maximum Battery DC Input Current	30 A
Maximum PV DC Input Current	37.5 A
Maximum PV DC Input Power	15 kW
Operating Input Voltage	380 - 450 Vdc
Peak Discharge Power, off-grid	15 kW for 5s
Maximum Continuous Output Current	40 A
Overcurrent Protection Device	50 A Breaker
Output Voltage Range	210 Vac - 264 Vac
Total Harmonic Distortion	<5%
Power Factor	0.85 lagging to 0.85 leading
PV Rapid Shutdown Switch and System Disconnect	Yes, lockable
CEC Solar to Home/Grid Efficiency	95.5%
Supported Islanding Devices	Lunar Bridge, Lunar MSA Controller + ConnectDER MSA
Warranty	12.5 years

## Compliance

<b>Certifications</b>	System: CAN/UL 9540, UL 9450A (indoor and outdoor), UL 1741 CRD PCS, UL 3141 (Issue 1) Inverter: UL 1741, UL 1741 SB, UL 1699B, CSA C22.2. No. 107.1
<b>Grid Connection</b>	IEEE 1547.1-2020, IEEE 1547.1-2018, SunSpec IEEE 2030.5 / CSIP, CA Rule 21
<b>Emissions</b>	FCC Part 15 Class B

Mechanical	10 kWh	15 kWh	20 kWh	25 kWh	30 kWh
<b>Dimensions (L x W x D)</b>	34.8" x 24.4" x 13.5" (884 x 619 x 344mm)	45.5" x 24.4" x 13.5" (1156 x 619 x 344 mm)	56.1" x 24.4" x 13.5" (1425 x 619 x 344 mm)	66.8" x 24.4" x 13.5" (1696 x 619 x 344 mm)	77.4" x 24.4" x 13.5" (1967 x 619 x 344 mm)
	Inverter: 12" x 24.4" x 13.5" (305 x 619 x 344 mm) Top + Bottom Cover: 3" x 24.4" x 13.5" (75 x 619 x 344 mm)				
<b>Heaviest Individual Component</b>	106 lb (48 kg)				
<b>Inverter Mass</b>	42 lb (19 kg)				
<b>Total Assembly Mass (including brackets &amp; covers)</b>	305 lb (139 kg)	421 lb (191 kg)	540 lb (245 kg)	659 lb (299 kg)	778 lb (354 kg)
<b>Mounting</b>	Floor or wall mounted				



## Environmental

<b>Ingress Rating</b>	System: Type 3R Inverter: Type 3R
<b>Operating Temperature</b>	-4°F to 122°F (-20°C to 50°C) <sup>2</sup>
<b>Storage Conditions</b>	Absolute Limits: -4°F to 140°F (-20°C to 60°C) < 95% RH 1 month: -4°F to 113°F (-20°C to 45°C) < 60%RH 2 months: 32°F to 95°F (0°C to 35°C) < 60%RH Up to 24 months: 65°F to 82°F (18°C to 28°C) < 60%RH
<b>Altitude</b>	Up to 9843 ft (3000 m)
<b>Operating Noise @ 1 m</b>	< 39.5 dbA (Typical) < 57.5 dbA (Maximum)

<sup>2</sup> Performance may be de-rated at operating temperatures below 0°C (32°F).

# DC Expansion Unit (DC ESS)

Lunar DC Expansion Unit is a UL9540-certified, 5kWh DC energy storage system unit (DC ESS) designed for easy expansion of battery energy capacity. Each DC expansion unit features a individual wall bracket for secure, independent wall mounting. Units can be vertically installed to deliver up to 30kWh of aggregate energy in a single vertical column.

## System

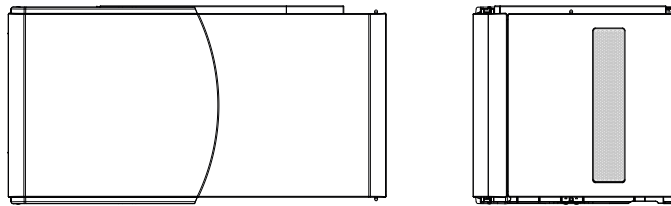
Model Number	LE-DC-UNIT
Rated Energy	5 kWh
Operating Voltage Range	190 Vdc - 225 Vdc
Maximum Continuous Power	2.5 kW (on grid and off-grid)
Peak Discharge Power, off-grid	3.75 kW (5s)
Cell Chemistry	Lithium Iron Phosphate (LFP)
Warranty	12.5 years

## Compliance

Certifications	CAN/UL 9540, UL 9450A (indoor and outdoor), CAN/UL 1973, UN 38.3
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## Mechanical

Dimensions (L x W x D)	12" x 24.4" x 13.5" (305 mm x 619 mm x 344 mm)
Mass	106 lb (48 kg)



## Environmental

Ingress Rating	Type 3R
Operating Temperature	-4°F to 122°F (-20°C to 50°C) <sup>2</sup>
Storage Conditions	<b>Absolute Limits:</b> -4°F to 140°F (-20°C to 60°C) < 95% RH <b>1 month:</b> -4°F to 113°F (-20°C to 45°C) < 60%RH <b>2 months:</b> 32°F to 95°F (0°C to 35°C) < 60%RH <b>Up to 24 months:</b> 65°F to 82°F (18°C to 28°C) < 60%RH
Altitude	Up to 9843 ft (3000 m)
State of Charge (SOC)	<30% initial

<sup>2</sup> Performance may be de-rated at operating temperatures below 0°C (32°F).

# Lunar Bridge

Lunar Bridge is a Microgrid Interconnection Device that automatically detects outages and seamlessly transitions between grid and island. It supports all home circuits with a service entrance rated load center.

## System

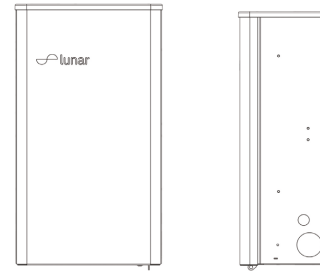
Model Number	90-06801A
Current Rating	200 A
Busbar Rating	200 A
Off-Grid Switchover Time	< 0.03s
Overcurrent Protection Device	Up to 200 A
Number of Panelboard Spaces	20 Spaces / 40 Circuits
AC Meter	Integral: +/- 0.2% External (Rogowski Coil): +/- 5%
Warranty	12.5 Years

## Environmental

Operating Temperature	-40°F to 140°F (-40°C to 60°C)
Ingress Rating	NEMA 3R

## Mechanical

Dimension (L x W x D)	26.7" x 14.1" x 9" (677 x 358 x 228 mm)
Mass	44 lbs (20 kg)
Mounting	Wall or semi-flush mount



## Compliance

Certifications	UL 1741, UL 67, UL 869A
Emissions	FCC Part 15 Class B

# Lunar Maximizer

The Lunar Maximizer is a DC-to-DC charge controller that connects to individual solar panel. It optimizes solar output via tracking the maximum power point, with real-time monitoring and rapid shutdown capability.

## System

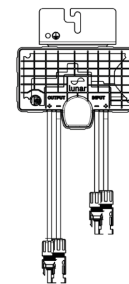
Model Number	10-00522E
Rated Input DC Power	650 W
Maximum Input Open Circuit Voltage (Voc)	75 Vdc <sup>3</sup>
MPPT Operating Voltage	20 Vdc - 60 Vdc
Maximum Input Short Circuit Current (Isc)	20 A
Maximum Output Current	16 A
PV String Length	Typical site: 9 - 20 Maximizers Shaded PV: 9 - 24 Maximizers
Usable PV power per string	6.6 kW (higher nameplate rating allowed and will curtail)
Parallel Strings of Different Lengths or Orientations	3 Strings
Warranty	25 Years

## Environmental

Operating Temperature	-40°F to 185°F (-40°C to 85°C)
Ingress Rating	IP66

## Mechanical

Dimension (L x W x D)	6.9" x 6.7" x 1.7" (176 x 169 x 43 mm)
Mass	1.6 lbs (725 g)
Mounting	Rack or panel mount
PV Connector	Staubli MC4



## Compliance

Certifications	UL 1741, CSA C22.2.107
Emissions	FCC Part 15 Class B

<sup>3</sup> A PV module is compatible if its nameplate specification, adjusted for site-specific cold temperature, is less than the Maximizer input rating

# Lunar Maximizer Hub

The Lunar Maximizer Hub is a junction box that combines PV strings and ensure reliable, instantaneous coordination between Lunar Maximizers and the inverter.

## System

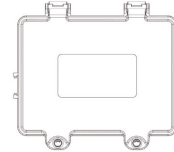
Part Number	90-004034
Operating Voltage	25 - 450 Vdc
DC Inputs	3 DC PV strings (3+ & 3- wire terminals + 1 ground terminal)
Maximum Current Per Terminal	50 A
Terminal Wire Size Range	8 AWG - 20 AWG (Red / Black) 6 AWG - 16 AWG (Ground)
Internal Communications	Mesh Wi-Fi to Maximizers, PLC to Inverter
Warranty	25 Years

## Environmental

Operating Temperature	-40°F to 185 °F (-40°C to 85°C)
Ingress Rating	NEMA 3R

## Mechanical

Dimension (L x W x D)	11" x 12" x 4" (280 x 305 x 102 mm)
Mass	2.3 lbs (1050 g)
Mounting	Rail mounting or comp shingle flashing



## Compliance

Certifications	UL 1741 CAN/CSA C22.2 No. 107.1. CSA C22.2 No. 290.
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# Rogowski Coil CT

Rogowski Coils are flexible, air-core sensors that provide accurate, non-intrusive AC current measurements. These current transformers (CTs) seamlessly transmit telemetry to the Lunar System to enable partial home backup monitoring.

## Specifications

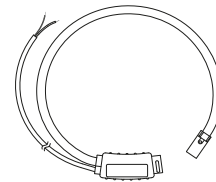
Magnelab Part Number	RCT-180L-Coil
Rated Primary Current	Up to 5000 Amp
Accuracy	0.5 Class per IEC 61869-2 Accuracy from 100 Amps to 15, 000 Amps
Phase Displacement	< 0.5°
Power Supply	9-36 VDC required (Not included)
UL Max Voltage	600 V on bare conductor BIL 10 kV
RMS Voltage	10,000 V for AC insulation Test (1 min)
Rated Frequency	30-1,000 Hz
Minimum Impedance	75 kOhms

## Environmental

UL Rated Ambient	55°C
Operating Temperature	-15°C to 65°C
Storage Temperature	-45°C to 80°C
UL Relative Humidity Rating	85%

## Mechanical

Coil Diameter	6.0"
Insulated Leads	Length: 8 ft, 24 AWG gray cable Rating: 600 V
Mass	0.40 lbs (0.18kg)



## Compliance

Certifications	UL 2808, CAN.CSA C22.2 No. 61010-1-12, IP64
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Lunar and ConnectDER make installations faster and simpler. Using ConnectDER's IslandDER™ Meter Socket Adapter together with the Lunar Meter Socket Adapter Controller, installers can integrate the Lunar System quickly and efficiently.

## System

Part Number	V-1-A-6 <sup>4</sup>
Maximum Continuous Current	200A
Short Circuit Rating	22k AIC
Power	12V DC bus to/from Lunar MSAC, Max 5W power supply available to 3rd party system from grid side of MID (load side of meter)
Current Sensing	ANSI 0.2 Accuracy Class CTs for Revenue Grade Sensing, Additional line and load side (of MID) Rogowski Coils at < 5% accuracy
Voltage Sensing	Line and Load side (of MID) - 0.4% Accuracy at Ambient, 1% Across Temperature Range
MID Control	Discrete open/close signals with 1ms input noise rejection, Actuation time < 15 ms
MID Rated Cycles	10,000
Warranty	12.5 years

## Environmental

Ingress Rating	NEMA 3R
Enclosure Type	UL 94 5VA flame rating
Ambient Operating Temperature	-22 F to 149 F (-30°C to 65°C)

# Lunar Meter Socket Adapter Controller (MSAC)

## System

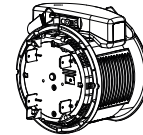
Model Number	LE-MSAC-01
MSAC Connection Voltage	12 VDC
MSAC Connection Rating	0.35 A
Inverter Connection Voltage	13 VDC
Warranty	12.5 years

## Environmental

Operating Temperature	-40°F (-40°C) to 140°F (60°C)
Storage Temperature	-40°F (-40°C) to 140°F (60°C)
Environment	Indoor and outdoor
Ingress Rating	Type 3R
Humidity	100%
Maximum Elevation	9,843 ft (3000m)

## Mechanical

Dimension (L x W x D)	7.8" x 6.7" x 4.9" (198 x 170 x 124 mm) With pluggable Connection Module
Mass	5.55 lbs. / 2.52 kg With Connection Module and 6 ft analog cable
Mounting	Blade interface with 4-jaw or 5 jaw meter socket
Electric Meter Compatibility	Type 2S, and 12S
Meter Socket Compatibility	Ringless, Ring-type, Lever, Horn Bypass
Manual MID Override	Externally Accessible Switch, Protected by (Dry Contact) Interlocked Tool-Access Cover
Thermal Management	Passive Cooling, Heat Sinks
Cable Connection	Factory-Wired Pluggable Connection, Weathertight, Reversible at Top of MSA, Pre-attached connector to Lunar MSAC
Cable Length	Just 6"



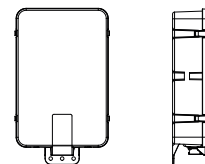
## Compliance

Certifications	UL 414 SA, SB, SC – Meter Sockets, UL 1741 / 3141 / 9741 system ready
Emissions	FCC CFR Part 15 Class B, ANSI C12 / IEC 61000
ETL File Number	5028888

<sup>4</sup> V-1-A-# (# denotes length up to 25 ft.) 6 ft. cable is standard length.

## Mechanical

Dimension (L x W x D)	11.9 in x 7.02 in x 2.99 in (303 x 178.4 x 76 mm)
Mass	2.2 lb (1 kg)
Mounting	Wall



## Compliance

Certifications	UL 1741, UL CSA 61010-1, UL CSA 61010-02-30
Emissions	FCC Part 15 Class B

The Lunar System, when paired with Eaton AbleEdge smart breakers, delivers a flexible and cost-effective way to extend backup power and integrate existing PV inverters.

## System

Current rating	15/20/30/40/50/60A <sup>4</sup>
Breaker type	BRS plug-on style
Metering	Revenue Grade Metering ( $\pm 0.5\%$ )
Ground Fault Circuit Protection (GFCI)	Yes
Max # of smart breakers per Lunar System	8
Compatible Panels	Lunar Bridge and any Eaton BR-style residential panels
Compatible PV inverters	All CEC-listed solar inverters
Maximum Non-Lunar AC PV in backup	11.5kWac combined
Maximum Distance from Lunar Bridge/MSA Controller	Free air: 75 ft (23 m) Through 1 wall (wood/drywall): 30 ft (9 m) Through 1 wall (concrete/brick): 10 ft (3 m)
Commissioning	Lunar Installer App
Warranty	10 years mechanical, 3 years electronics

<sup>4</sup> 40/50/60A available today. Contact Lunar for 15/20/30A availability.

## Environmental

Ambient operating temperature	-30 °C to +40 °C
Humidity	0% to 90%, noncondensing

## Mechanical

Footprint	2-pole: Takes 2 spaces in a loadcenter
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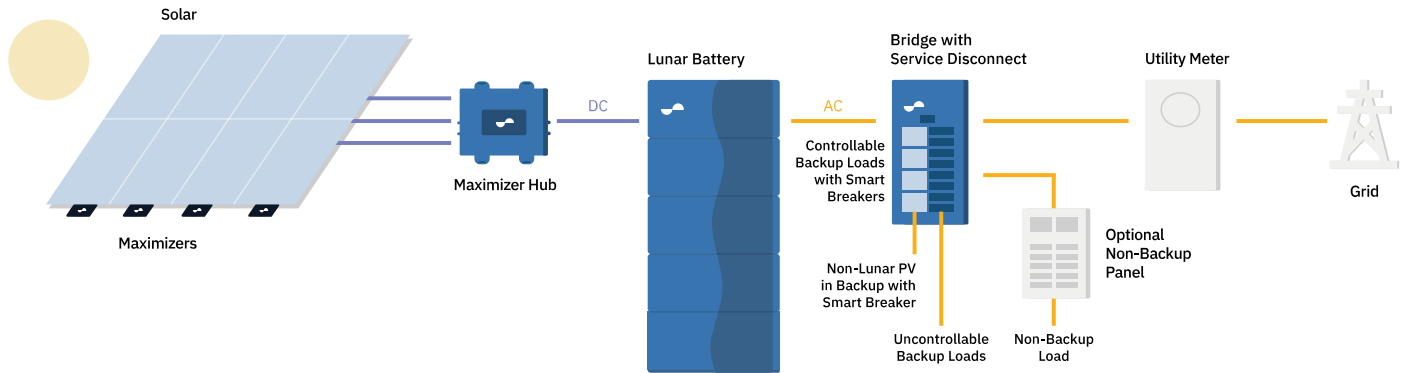


## Compliance

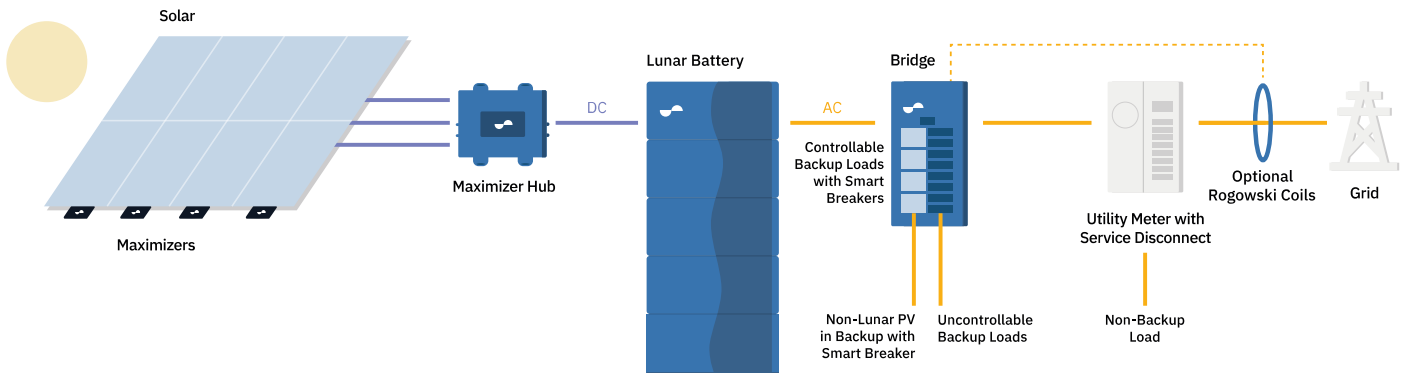
Certifications	UL 943; CSA C22.2 No. 144.1-16, UL 486A-486B, CSA C22.2 No. 65, UL 489, CSA C22.2 No. 144.1, UL 1998, CSA C22.2 No. 0.8, UL 60730-1, FCC Part 15, ICES-003
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# System Layout

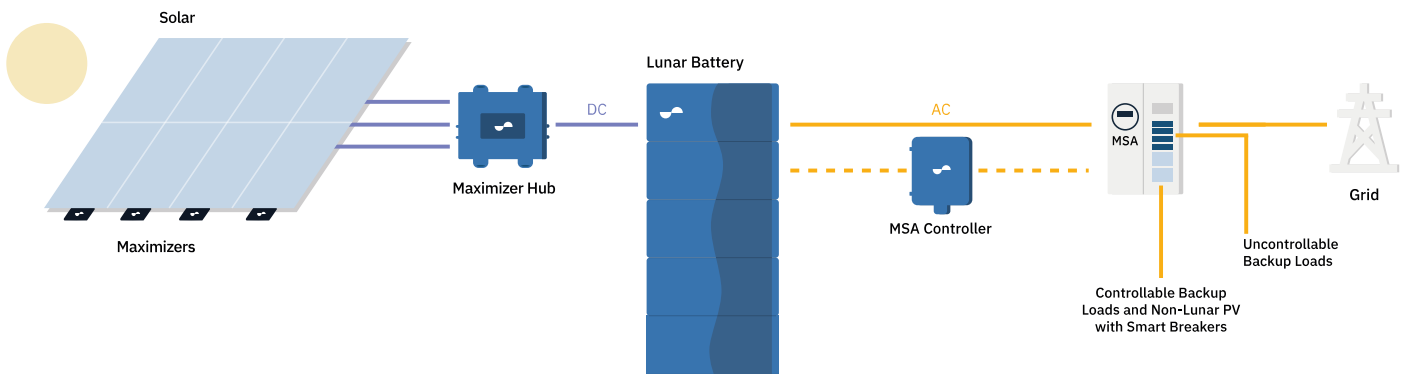
## Lunar System with Service Disconnect at Lunar Bridge



## Lunar System with Service Disconnect at Utility Meter



## Lunar System with MSA and MSA Controller





[lunarenergy.com](http://lunarenergy.com)