



Outdoor Cabinet Battery Energy Storage System (BESS)



Key Features

30KW and 100KW – 2 Hour Battery Storage (Battery-in a box) Solution

PV Enabled for plug in photovoltaic array

Transportable by road and sea fully assembled, plug and play.

Multiple safety protections on battery cell, module, rack and system level.

Internal Fire suppression System

Low Noise emissions <75bBA

Remote monitoring, diagnostics, support and control capability



Applications

Uninterruptible Power Supply (UPS) – Provides seamless ride-through and power bridge

Generator Hybridization – *Every generator becomes a **Hybrid** generator.*

Peak Shaving and Valley Filling – *Demand side load management*

Energy Arbitrage – *Store energy from renewables and limits curtailment*

Frequency & Voltage Regulation – *Instantaneous response to grid instability, prevents
blackouts & brownouts*

Power Filtering – Cleans dirty power and provides harmonic filtering

Transmission & Distribution (T&D) Deferral – Power line upgrades can be deferred or
cancelled

Electric Vehicle (EV) Charging – Enable EV charging station location in weak electric grids

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Mackinlay Energy

Model	ESSA0030B-0055	ESSA0050B-0055	ESSA0050B-0100	ESSA0100B-0215
Rated power (kW)	30	50	50	100
Rated voltage (V)	400			
Rated current (A)	43	72	72	144
Voltage range (V)	320V-460V			
Rated frequency	50/60Hz			
Frequency Range	45-55/55-65Hz			
THDi(on-grid)	<3%			
THDu (off-grid)	≤ 1% linear; ≤ 5% non-linear			
Power factor	1 (0.8 leading ~ 0.8 lagging can be set)			
Overload capacity	110% Long term			
AC output	3W+N+PE			
Isolation transformer	100/400	200/400	200/400	270/400
On -grid off-grid switching	Support			

PV data

Max.PV input voltage (V)	1,000			
Max. PV power (kW)	60/120	60/120	60/120	120/180/240
MPPT operating voltage range (V)	250-850			
MPPT full load voltage range (V)	450-850			
Buck-boost mode	Support			

Battery data

Cell type	3.2V/120Ah/1C,LFP	3.2V/120Ah/1C,LFP	3.2V/280Ah/1C,LFP	3.2V/280Ah/1C,LFP
Nominal voltage(V)	460.8V, 1P144S	460.8V, 1P144S	358.4V, 1P112S	768V, 1P240S
Nominal energy (kWh)	55.296	55.296	100.352	215.04
Working voltage range (V)	403.2-511.2	403.2-511.2	319.2-397.6	672-850
Max. charge and discharge rate	1C@25°C	1C@25°C	0.5C@25°C	0.5C@25°C
Cycles	≥3,800	≥3,800	≥5,000	≥5,000

System data

Dimensions W *D *H (mm)	1,770×1,510×2,270	1,770×1,510×2,270	1,770×1,510×2,270	2,450×1,550×2,400
Net weight (kg)	2,000	2,200	2,400	3,900
Operating temperature (°C)	0 ~ +45			
Relative humidity	0 ~95% (non-condensing)			
Ingress protection	IP54			
Noise emission (dB)	<75			
Operating altitude	3,000m			
Cooling	Intelligent air cooling			
fire extinguishing system	Aerosols/NOVEC1230			
Display	Touch LCD display+cloud platform			
EMS communication	RS485, TCP/IP			