



AERL AIO Max

Commercial All-in-One
Energy Storage System

The AERL AIO Max is a fully-integrated commercial & industrial battery energy storage system — 125 kW hybrid inverter, lithium battery modules, BMS, fire suppression and thermal management in one outdoor enclosure. A 125 kW hybrid inverter pairs with 257 kWh of LiFePO₄ storage built on large-capacity 314 Ah cells, giving system designers a single high-density SKU instead of separately-procured inverters, racks and cabinets. Engineered, supplied and supported in Australia by AERL.

Product Highlights



High Energy Performance

- 48A inputs with 6 MPPTs for optimized PV yield
- 300A charge/discharge for high-power cycling
- 100% three-phase unbalance for diverse loads
- 165kVA backup peak for 10s surge support



Flexible Power Architecture

- Dual independent battery ports
- Half-wave load support for industrial applications
- On-grid, off-grid and parallel operation modes
- Diesel generator compatibility for weak-grid sites



Robust Safety & Durability

- Four-level fire protection with multi-sensor detection
- Combustible gas, smoke & temperature detection with active exhaust
- IP66 inverter and IP55 cabinet for outdoor resilience
- C4/C5 anti-corrosion for challenging environments



Intelligent Control & O&M

- Built-in AI EMS with PV forecasting & ToU optimization
- Dynamic pricing for automated energy optimization
- <20 ms seamless off-grid switching
- Remote monitoring and firmware updates



125kW

Power Rating

257kWh

Storage Capacity

Australian Energy Research Laboratories

📍 1/75 Bluestone Circuit, Seventeen Mile Rocks, QLD, 4073.

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System Model		AIO-MAX-125-257
Rated AC Output Power	[kW]	125.0
Battery Energy	[kWh]	257.2
Usable Battery Energy	[kWh]	231.48
Operating Temperature Range	[°C]	-20~50
Relative Humidity	[%]	5~95 (non-condensing)
Max. Operation Altitude	[m]	3000
Cooling (Battery Cabinet)		Air-conditioner with 5kW Cooling and 3.7kW Heating
Noise Level	[dB]	≤70
Display		LED & OLED
Communication		CAN, RS485
Hybrid Inverter Model		M2HT-125K-300
PV Input		
Max. PV Array Power	[kWp]	250
Max. PV Input Voltage *	[V]	1000*
Rated PV Input Voltage	[V]	620
Start-up Voltage	[V]	135
MPPT Operating Voltage Range *	[V]	160~950
No. of MPP Trackers		6
No. of Strings per MPPT		3
Max. Input Current per MPPT	[A]	48×6
Max. Short-circuit Current per MPPT	[A]	60×6
Battery Side		
Battery Voltage Range	[V]	300~950
No. of Battery Inputs		1 or 2
Max. Charge/Discharge Current	[A]	300 or 150×2
Max. Charge/Discharge Power	[kW]	125/125
Grid Side (On-Grid)		
Rated Output Power	[kW]	125.0
Max. Output Apparent Power	[kVA]	125.0
Rated AC Voltage	[V]	3L/N/PE; 220/380V; 230/400V; 240/415V
Rated AC Frequency	[Hz]	50/60
Rated Output Current	[A]	189.4/181.2/173.6
Power Factor		0.8 leading ... 0.8 lagging
THDi (@Rated Power)		<3%
Max. Input Apparent Power **	[kVA]	207
Max. AC Input Current	[A]	300
Back-up Side (Off-Grid)		
Rated Output Power	[kW]	125.0
Peak Output Apparent Power	[kVA]	165 @10s
Rated Output Voltage	[V]	3L/N/PE; 220/380V; 230/400V; 240/415V
Rated Output Frequency	[Hz]	50/60
Rated Output Current	[A]	189.4/181.2/173.6
On/Off-grid Switching Time		<20ms
THDv (@Linear Load)		<3%
Efficiency		
MPPT Efficiency		99.90%
Max. Efficiency		98.00%
European Efficiency		97.80%
Inverter General Data		
Dimensions	[W×H×D mm]	1232×932×356
Weight	[KG]	164
Ingress Protection		IP66
Anti-corrosion Grade		C4
Battery Cabinet Model		E2BR-S257K-C
Battery Type		LiFePO ₄ / 314Ah
Battery Module Quantity		16 Packs (E2BR-B16K, 16.08 kWh, 1P16S, 51.2V)
Depth of Discharge		90%
Rated Voltage	[V]	819.2
Operating Voltage Range	[V]	716.8~921.6
Recommended Charge/Discharge Current	[A]	157
Cycle Life		8000 ***
Dimensions	[W×H×D mm]	1100×1300×2393
Weight	[KG]	2500
Ingress Protection		IP55
Anti-corrosion Grade		C4 / C5 (Optional)

* Max. PV input voltage is 950V – the inverter stops operating between 950V and 1000V and will be damaged above 1000V.
** Max. input apparent power = maximum grid import to supply backup loads and charge the battery.
*** Cycle life: 25 ± 1°C, 0.5P charge/discharge rate, SOH = 70%, per battery cell manufacturer's data.