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AERL AIO

Commercial All-in-One
Energy Storage System

The AERL AIO is a fully-integrated commercial battery energy storage cabinet — hybrid inverter, lithium battery modules, BMS, fire suppression and thermal management in one outdoor enclosure. Five power ratings from 25 kW to 50 kW pair with four battery capacities from 64 kWh to 112.5 kWh, giving system designers a single SKU per project instead of separately-procured inverters, racks and cabinets. Engineered, supplied and supported in Australia by AERL.

Product Highlights



High Energy Performance

- 20A inputs with 4 MPPTs for optimized PV yield
- 150A charge/discharge for high-power cycling
- 100% three-phase unbalance for diverse loads
- 150% backup overload for surge protection



Flexible Power Architecture

- Half-wave load support for industrial applications
- Up to 10-unit AC side or off-grid paralleling
- Diesel generator compatibility for weak-grid sites
- Smart control for EV chargers and heat pumps



Robust Safety & Durability

- Four-level fire protection with multi-sensor detection
- IP66 inverter and IP55 cabinet for outdoor resilience
- C4/C5 anti-corrosion for challenging environments
- Integrated distribution with breakers, SPD, and UPS power



Intelligent Control & O&M

- Built-in EMS with multi-mode ToU scheduling
- Dynamic pricing for automated energy optimization
- <10 ms seamless off-grid switching
- Remote monitoring and firmware updates



25–50kW

Power Range

64.3–112.5kWh

Storage Capacity

Australian Energy Research Laboratories

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

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System Model	AIO-25K	AIO-29.9K	AIO-30K	AIO-40K	AIO-50K
Rated AC Output Power [kW]	25.0	29.9	30.0	40.0	50.0
Dimensions [WxHxD mm]	1376x2262x1140				
Battery Expansion [kWh]	64/80/96/112				
Operating Temperature Range [°C]	-20~55				
Relative Humidity [%]	5~95(non-condensing)				
Max. Operation Altitude [m]	3000				
Cooling	Air-conditioner with 2kW Cooling and 2kW Heating				
Noise Level [dB]	< 65				
Display	LED & OLED				
Communication	CAN, RS485				
Hybrid Inverter Model	M2HT-25-150	M2HT-29.9-150	M2HT-30-150	M2HT-40-150	M2HT-50-150
PV Input					
Max. PV Array Power [kWp]	50	60	60	80	100
Max. PV Input Voltage * [V]	1000*				
Rated PV Input Voltage [V]	620				
Start-up Voltage [V]	135				
MPPT Operating Voltage Range * [V]	200~950*				
No. of MPP Trackers	4	4	4	4	4
No. of Strings per MPPT	2/2/2/2	2/2/2/2	2/2/2/2	2/2/2/2	2/2/2/2
Max. Input Current per MPPT [A]	40/40/40/40	40/40/40/40	40/40/40/40	40/40/40/40	40/40/40/40
Max. Short-circuit Current per MPPT [A]	50/50/50/50	50/50/50/50	50/50/50/50	50/50/50/50	50/50/50/50
Grid Side (On-Grid)					
Rated Output Power [kW]	25.0	29.9	30.0	40.0	50.0
Max. Output Apparent Power [kVA]	25.0	29.9	30.0	40.0	50.0
Rated AC Voltage	3L/N/PE; 220/380V;230/400V;240/415V				
Rated AC Frequency [Hz]	50/60				
Rated Output Current [A]	37.9/36.2/34.7	45.3/43.3/41.5	45.5/43.5/41.7	60.6/58/55.6	75.8/72.5/69.4
Power Factor	0.8 leading ...0.8 lagging				
THDi (@Rated Power)	<3%				
Back-up Side (Off-Grid)					
Rated Output Power [kW]	25.0	29.9	30.0	40.0	50.0
Peak Output Apparent Power [kVA]	37.5@10s	45@10s	45@10s	60@10s	75@10s
Rated Output Voltage [V]	3L/N/PE; 220/380V;230/400V;240/415V				
Rated Output Frequency [Hz]	50/60				
Rated Output Current [A]	37.9/36.2/34.7	45.3/43.3/41.5	45.5/43.5/41.7	60.6/58/55.6	75.8/72.5/69.4
On/Off-grid Switching Time	<10ms				
THDv (@Linear Load)	<3%				
Generator Side					
Max. Input Apparent Power [kVA]	25.0	29.9	30.0	40.0	50.0
Rated Input Voltage	3L/N/PE; 220/380V; 230/400V				
Rated Input Frequency [Hz]	50/60				
Max. Input Current [A]	37.9	45.3	45.5	60.6	75.8
Efficiency					
MPPT Efficiency	99.90%				
MPPT Efficiency	99.90%				
European Efficiency	97.20%				
General Data					
Dimensions [WxHxD mm]	919x739x305				
Weight [KG]	89				
Ingress Protection	IP66				
Standby Self-consumption [W]	<40				
Battery Model	S64	S80	S96	S112	
Battery Type	LiFePO ₄ / 314Ah				
Battery Module Quantity	4 Packs	5 Packs	6 Packs	7 Packs	
Rated Energy [kWh]	64.3	80.3	96.4	112.5	
Depth of Discharge	90%				
Battery Rated Range [V]	204.8	256	307.2	358.4	
Operating Voltage Range [V]	166.4~233.6	208~292	249.6~350.4	291.2~408.8	
Max. Charging/Discharge Current [A]	150/150				
Weight [KG]	1101	1214	1327	1440	
Ingress Protection	IP55				

* PV Max. Input voltage is 950V, otherwise inverter will be waiting;

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