



MIL-AESU Series Generator Hybridization Unit

MIL-AESU Series

info@pacificenergyinc.com



- **Plug-and-Play**
- **Multiple Energy Source Hybridization**
- **Up to 70% in Fuel Savings***
- **Up to 70% Emission Reduction**
- **Voltage Stabilization to 1%**
- **3 Phase AC 120/208 & 1 Phase AC120/240**
- **Easy-to-Use Interface**
- **No Noise**

*: dependent on user's load factor



Microgrid



Generators



Renewables



Hybrid

Pacific Energy's MIL-AESU is the most advanced hybridization unit of its category. It is fully optimized to deliver quiet, safe, and most reliable, uninterrupted high-quality power in the smallest package with maximum fuel savings.

This AESU system consists of an energy storage system (1 or more battery packs depending on the application) controlled and managed by Pacific Energy's proprietary suite of power electronics devices which include an exhaustive battery management system (BMS), a high-efficiency broadband SiC based inverter and an intelligent power control management unit (IPCM™) for high and low-level controls of the energy storage system. The AESU can either operate in Generator Hybridization mode or UPS Mode, as follows:

Generator Hybridization mode is to manage the generator in the most efficient way possible. The operation would begin with the charging of the batteries. Once the batteries are fully charged, the generator is turned off automatically, and the load would be served entirely by the energy storage system. During this mode, the generator runs at or near its rated output when runtime is the most fuel-efficient and less polluting. The other benefits are extending noise-free period, prolonged generator lifetime, and maintenance cost cuts.

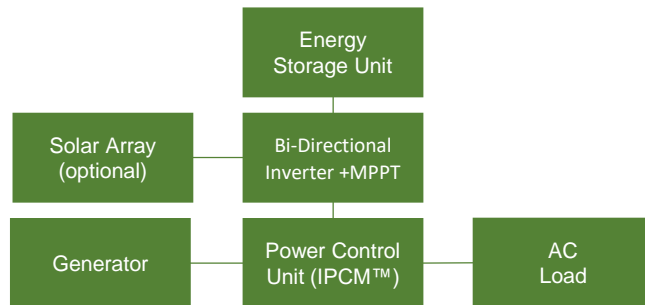
UPS mode is to operate the unit in parallel with generators, to instantly provide back-up power to all critical loads. The installation is the same for each mode; however, in the UPS mode, the battery is always kept at 100% capacity until loss of power from generating source.

- PV DIESEL HYBRID MICROGRID
- DIESEL GENSET HYBRIDIZATION
- UPS
- STANDALONE OR NETWORK

AESU System Block Diagram



The MIL-AESU is positioned between the generator and the load. It allows the generator to operate at its rated output without any interruption, reducing noise and minimizing toxic emissions while providing reliable and efficient energy. PV solar arrays directly connect into the unit. Photovoltaic power generation is optimized with an MPPT charge controller, extending the use of the energy storage system, reducing generator runtime.



General Specifications

Storage Capacity	5-30	kWh
Maximum Power Output*	60	kW
Rated Diesel Generator	10, 30, 60	kW
Weight	771	kg
	2700	Lbs.
Width x Length x Height	0.91x1.82x1.22	m
	36 x 72 x 48	in
AC Gen. Input Voltage	3 ϕ AC 120/208V and 1 ϕ AC 120/240V	
Monitors	Voltage • Currents • Frequency • State of Charge (SOC)	
Safety Features	DC Overvoltage • DC Undervoltage • DC Overcurrent • Generator Overvoltage • Generator Undervoltage • Overtemperature • Power Electronics • Fault BMS Fault	
Communication	Ethernet Port (Optional)	
Chemistry	Lithium Titanate (LTO)	

AC Output Power Specifications	Min	Nom	Max	Units
Rated Output Voltage (3 ϕ) [1 ϕ optional]	115.2/199.6	120/208 • 120/240	124.8/216.3	VAC
Rated Output Power		- 60	60	kW
Frequency	58.2	60	61.8	Hz

Environmental Specifications				
Temperature (above 65°C with degradation)	-45		60	°C
Cooling	Liquid Cooled			
Rated Maximum Elevation	2,000/ 6,000			m/ ft.

Energy Storage Specifications				
Charge Time (at 60 kW input)	30			Min.
Battery Capacity (per module)	5	33		kWh
Pack Voltage (per module)	270	414	486	VDC
Pack Current	-160	-80/80	160	A
Cycles (at 2C charge/discharge)	10,000	15,000		cycles
Depth of Discharge (DoD)	Up to 95%			

*: MIL-AESU units are fully customizable to meet energy storage and power requirements
 Specifications subject to change without notice. Contact Pacific Energy for updated information.
 Copyright © 2019 Pacific Energy Inc. All rights reserved.

info@pacificenergyinc.com



pacific
energy

Sales: 3080 12th St.
Riverside, CA 92507

R&D: 6969 Jurupa Av
Riverside, CA 92504

(951) 588-1642