

Capstone HES Mini BESS

The Capstone Hybrid Mini serves as a “Microgrid in a Box” where grid power is unavailable or unreliable. The HES Mini consists of a DC generator and a Lithium Ion Battery Energy Storage System (BESS).



Capstone HES Mini

Genset Style Enclosure

Width x Depth x Height | 2200 x 900 x 1350 mm (x x x x in)

Folded steel panels

Three separate equipment compartments, engine compartment, electrical panel compartment and battery compartment

Engine Compartment: 3 doors, forced ventilation, acoustic insulation 75 dB @ 7m

Electrical Panel Compartment: 1 door, sealed and insulated

Battery Compartment: 1 door, sealed and insulated

Internal walls: Insulated fire rated panels

Control System

Microprocessor controlled

Fully automatic, autonomous operation

Remote monitoring, diagnosis and control

Historical data trending with variable voltage and frequency

Monitors and controls all major operating parameters

Expandable to monitor clients equipment or relay signals to client's system

Engine

Industrial gas or diesel engine

Inline 4-stroke-cycle

Applications

- Organic grid development
- Microgrids
- Wind farm/solar farm support services and storage
- Utility grid integration and support services:
 - Peak shaving
 - UPS
 - Energy storage
 - Backup power
 - Synthetic inertial response
 - Arbitrage
 - Fault ride through
 - Fast frequency response
 - Voltage stabilisation and support

**Smarter Energy
for a Cleaner Future**

Battery Module

Light weight and compact - Lithium Ion

Built in Battery Management System and safety disconnect

Low maintenance, sealed for life construction

48V DC, 63 or 126 Ah Modules

Up to 1,008 Ah capacity by connecting up to 8 modules in parallel

4 times longer cycle life than lead acid

Very high charge and discharge capability

Battery Management System

Self-diagnostics

Charge and discharge enable supervision and control

State of charge, health, current, temperature, cell resistance monitoring

Multiple strings of cells in parallel and series for battery redundancy (Optional)

Air Conditioning

Free air cooling unit, Thermosyphon

DC air conditioner

Hybrid free air cooling / DC air conditioner

Up to 3,000 Watts cooling @ 48 V DC

R134a Refrigerant

Quiet (65 dB @ 1.5m)

Variable speed compressor and fans

Microchannel heat exchangers

Alternator

Permanent Magnet type

Operating speed 2,200 – 2,800 RPM

Rated power up to 20kW*

Thermal protection

Overcurrent protection

Overspeed protection

Simple construction; 1 moving part, no bearings or sliding contacts

Voltage ripple < 1%