

# HYbrid ENERGY

HES  
MINI  
20kW



## Application:

- Site Loads up to 400 A possible (48 V DC)
- Recommended load factor is < 50% for optimum CapEx / OpEx balance
- Increased fuel efficiency can be achieved by reducing load factor further
- There is NO MINIMUM LOAD

## Genset Style Enclosure:

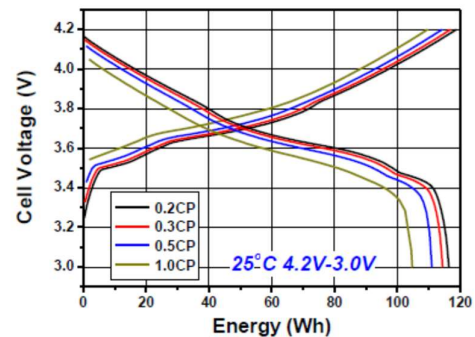
- 2200mm x 900mm x 1350mm (w x d x h)
- Folded steel panels
- Powder coated finish
- Three separate equipment compartments, engine compartment, electrical panel compartment and battery compartment
- Engine Compartment:
  - 3 doors
  - Forced ventilation
  - Acoustic insulation <69 dB(A) @ 7m
- Electrical Panel Compartment:
  - 1 door
  - Sealed and insulated
- Battery Compartment:
  - 1 door
  - Sealed and insulated
- Forced Ventilation
- Fork lift pockets

## Battery Management System:

- Up to 10 modules in parallel
- Self diagnostics
- Cell balancing
- 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\*

## Battery:

- Lithium Ion
- Light weight and compact
- 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
- 'Hot Swap' capability



## Alternator:

- Permanent Magnet type
- Rated power up to 20kW\*
- Thermal, Overcurrent and Overspeed protection
- Simple construction; 1 moving part, no bearings or sliding contacts
- Low voltage ripple

### Engine:

- Perkins 404D-22
- 4 stroke indirect injection compre
- Diesel fuel
- 4 cylinder compact package
- Liquid cooled
- 2.2 litre displacement
- Low fuel consumption, over wide range of speeds
- 500 hour service intervals



### Control System:

- Microprocessor controlled
- Fully automatic, autonomous operation
- Remote monitoring, diagnosis and control
- Historical data trending
- Monitors and controls all major operating parameters of the HYbrid system
- Expandable to monitor clients equipment or relay signals to client's system\*

### 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
- High efficiency

\*Indicates optional equipment

### Remote Monitoring:

- GPRS or TCP communication
- Full remote control and monitoring
- Email & SMS alerts\*
- Web based interface
- Historical data recording
- Alarm list and fault reset
- Fleet status at-a-glance

System	Feature	Benefit
Fuel	<b>Up to 1000 litre tank*</b> <b>Secondary Racor turbine filter*</b> <b>Water in fuel sensor*</b>	-Up to 3 months between refuelling (adds 750mm to height) -Increases fuel filter life where there is heavy fuel contamination -Shuts down engine safely if fuel is contaminated with water
Lube oil	<b>Bypass oil filter with evaporation chamber*</b>	-Removes contaminants and acidic by-products of combustion. Increases oil life. Ideal for areas with poor fuel quality -Service interval up to 1,000 hours
Electrical System	<b>400 A rating*</b> <b>Solar Array*</b>	-Peak loads of 400 A possible -Increase fuel efficiency by using solar energy to charge the battery pack and power the site load during the day
Alternator	<b>400 A rating*</b> <b>PMG</b>	-Max continuous DC load possible, 400 A -Robust, simple and reliable. High efficiency
Enclosure	<b>All steel construction</b> <b>Separate electrical, battery and engine compartments</b>	-Secure and vandal resistant -Different operating environments to suit the equipment therein
Controls	<b>GPRS communication*</b>  <b>Flexible Protection functions</b>	-Web based remote monitoring -Remote fault diagnosis and repair -Configurable to client's requirements* -Monitors HES performance and protects the equipment from damage in the case of a malfunction
Battery	<b>Lithium Ion</b>	-Built in Battery Management System -Up to 1,008Ah capacity -Longer life, Low maintenance -High charge and discharge capabilities
Weight	<b>Dry Weight</b>	-1160kg, with batteries

\* Indicates optional equipment

\*\* Due to HYbrid Energy's policy of continuous improvement, these specifications are subject to change without notice