## SPAR-HPS Hybrid Energy Storage Inverter

The HPS is a hybrid grid connected Bi-directional storage inverter provides reliable control of the Energy Storage System (ESS) from renewable resources, backed-up with the grid Integrated controls provide complete management of the charge and discharge of the ESS. The SPAR- HPS is compatible with a range of storage solutions, including traditional battery systems, lithium-ion batteries, Lithium Iron Phosphate (LiFePO4) and Super-capacitors, can be packaged with the ESS as an integral plug and play system

# FEATURES

### Microgrid

Stabilizes a microgrid against transient events caused by step loads and renewable power sources.

• Grid following and forming modes.
Seamless Mode Transfer

- Seamless transfer between grid forming, and following modes.,

### Flexibility

Designed for a wide range of applications and compatible with virtually any power source.

### Lower Fuel Consumption

- Integration with generator sets minimizes fuel consumption and emissions.

### Energy Storage Management

Built-in intelligent controls for charging, discharging, equalization, and state-of-charge estimation for energy storage elements.
Operational in Autonomous or Remote-Control modes (works in conjunction with supervisory controller).

### DC Inputs

- PV Input
- Battery input

### Touch Screen

User friendly touch-screen display offers real-time system information, configurable data logging, remote access, and more

## Datasheet

| | Spar-HPS-100 | Spar-HPS-120 | Spar-HPS-150 |
|---|---|---|---|
| **AC (Grid-Connected Mode)** | | | |
| Apparent power (kVA) | 110 | 132 | 165 |
| Rated power (kW) | 100 | 120 | 150 |
| Rated voltage | 190-240 | 190-240 | 190-240 |
| Rated current (A) | 304-341 | 2889-355 | 361-456 |
| Rated frequency (Hz.) | 50/60 | 50/60 | 50/60 |
| Frequency range | 45-55/55-65 | 45-55/55-65 | 45-55/55-65 |
| THDI (%) | <3 | <3 | <3 |
| PF | -0.8/0.8 | -0.8/0.8 | -0.8/0.8 |
| **AC (Off-grid, Island mode)** | | | |
| Apparent power | 110 | 132 | 165 |
| Rated power | 100 | 120 | 150 |
| Rated voltage | 190-240 | 190-240 | 190-240 |
| Rated current (A) | 304-341 | 2889-355 | 361-456 |
| Rated frequency (Hz.) | 50/60 | 50/60 | 50/60 |
| THDV (%) | <2 | <2 | <2 |
| Overload capacity (% for 10 min.) | 110 | 110 | 110 |
| Overload capacity (% for 1 min.) | 120 | 120 | 120 |
| **DC (Battery and PV)** | | | |
| Max PV open circuit voltage | 1000 | 1000 | 1000 |
| Max PV power (kWp) | 150 | 185 | 225 |
| PV MPPT voltage range (Vdc) | 480-800 | 480-800 | 480-800 |
| Battery voltage range at max. charge power | 500-600 | 500-600 | 500-600 |
| Battery voltage range | 352-600 | 352-600 | 352-600 |
| Max. charge power (kW) | 150 | 180 | 225 |
| Max. discharge power (kW) | 110 | 132 | 165 |
| Max. charge current (A) | 300 | 350 | 450 |
| Max. discharge current (A) | 313 | 374 | 467 |
| **General Information** | | | |
| Protection degree | IP 20 | IP 20 | IP 20 |
| Noise emission dBA (at 1m) | <65 | <65 | <65 |
| Operating temperature | -25 to +55 Deg. C | -25 to +55 Deg. C | -25 to +55 Deg. C |
| Cooling | Forced air | Forced air | Forced air |
| Relative humidity | 0-95% non condensing | 0-95% non condensing | 0-95% non condensing |
| Maximum altitude (m) | 3000 | 3000 | 3000 |
| Dimensions mm (LXDXH) | 1200X800X900 | 1200X800X900 | 1200X800X900 |
| Weight (kg) | 948 | 1025 | 1230 |
| Transfer between on/off grid | Automatic <= 10 ms. | Automatic <= 10 ms. | Automatic <= 10 ms. |
| Standby consumption (W) | <30 | <30 | <30 |
| **Communication** | | | |
| Display | Touch screen | Touch screen | Touch screen |
| Communication | RS485/CAN | RS485/CAN | RS485/CAN |