



GreensunSolar



## Rack Type HV Battery System

GHR-314

# ESS

*Energy storage systems have been proven to be  
"extremely lucrative" for commercial and industrial (C&I) field.*

### Safe and Reliable

- LiFePO4 Batteries with safety performance and long cycle life
- Intelligent BMS
- Support aerosol fire extinguishing
- Support up to 140A current output

### High-Efficiency Use

- Low self-discharge up to 6 months, no memory effect

### Support Wifi&Upgrade

- Wi-Fi module, real-time data monitoring
- Support USB upgrade, remote upgrade

### Intelligent BMS

- Multi protection functions including over-discharge, over-charge, over-current and over-high or low temperature
- Automatically manage charge and discharge state and balance current and voltage of each cell

### Flexible Expansion

- Support 3 ~ 15 packs in series

### Economical&Convenient

- Rack Type, less footprint, lower cost, higher spaceutilization
- Embedded designed module for quick installation and easy maintenance

## Technical Data

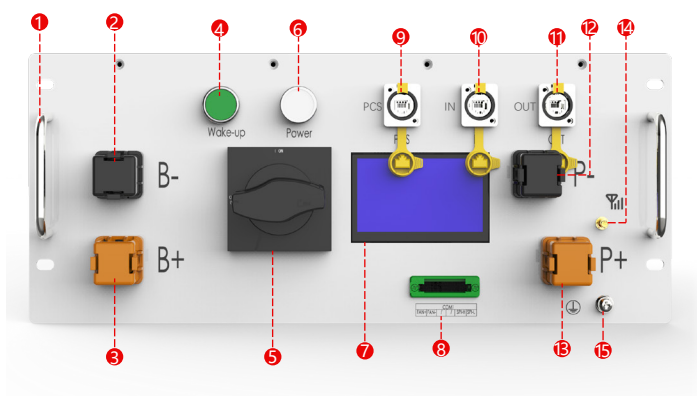
| Battery Module Model                      |                | GHR-314                          |              |              |              |               |               |
|-------------------------------------------|----------------|----------------------------------|--------------|--------------|--------------|---------------|---------------|
| Main Parameter                            |                |                                  |              |              |              |               |               |
| Cell Chemistry                            |                | LiFePO4                          |              |              |              |               |               |
| Module Energy (kWh)                       |                | 16.076                           |              |              |              |               |               |
| Module Nominal Voltage (V)                |                | 51.2                             |              |              |              |               |               |
| Module Capacity (Ah)                      |                | 314                              |              |              |              |               |               |
| ITEM                                      |                | GHR-314-E64                      | GHR-314-E80  | GHR-314-E96  | GHR-314-E112 | GHR-314-E128  | GHR-314-E144  |
| Battery Module Qty In Series ( Optional ) |                | 4                                | 5            | 6            | 7            | 8             | 9             |
| System Nominal Voltage (V)                |                | 204.8                            | 256.0        | 307.2        | 358.4        | 409.6         | 460.8         |
| System Operating Voltage (V)              |                | 179V~227V                        | 224V~284V    | 269V~341V    | 314V~398V    | 358V~454V     | 403V~511V     |
| System Energy (kWh)                       |                | 64.31                            | 80.39        | 96.46        | 112.53       | 128.61        | 144.69        |
| System Usable Energy (kWh) 90%            |                | 57.88                            | 72.35        | 86.81        | 101.28       | 115.75        | 130.22        |
| Charge/Discharge                          | Nominal        | 157A                             |              |              |              |               |               |
| Current(A)                                | Peak Discharge | 157A                             |              |              |              |               |               |
| Other Parameter                           |                |                                  |              |              |              |               |               |
| Thermal Management                        |                | Smart fan cooling                |              |              |              |               |               |
| LCD Display                               |                | SOC/ Voltage/Tem/Time/Fault Code |              |              |              |               |               |
| Working Temperature (°C)                  |                | Charge:0~55/Discharge :-20-55    |              |              |              |               |               |
| Status Indicator                          |                | Wake Up/Power light              |              |              |              |               |               |
| Communication Port                        |                | CAN/RS485                        |              |              |              |               |               |
| Humidity                                  |                | 5%~85%RH                         |              |              |              |               |               |
| Altitude                                  |                | ≤2000m                           |              |              |              |               |               |
| IP Rating of Enclosure                    |                | IP20                             |              |              |              |               |               |
| Dimension (W*D*H, mm)                     |                | 582*838*1480                     | 582*838*1736 | 582*838*1992 | 582*838*2248 | 1184*838*1480 | 1184*838*1480 |
| Weight Approximate (kg)                   |                | 534kg                            | 655kg        | 779kg        | 903kg        | 1037kg        | 1151kg        |
| Installation Location                     |                | Rack Mounting                    |              |              |              |               |               |
| Storage Temperature (°C)                  |                | 0~35°C                           |              |              |              |               |               |
| Recommend Depth of Discharge              |                | 90%                              |              |              |              |               |               |
| Cycle Life                                |                | 25±2°C, 0.5C/0.5C, DOD80%≥6000   |              |              |              |               |               |
| Warranty                                  |                | 10 years                         |              |              |              |               |               |
| Certification                             |                | CE/UN38.3/MSDS                   |              |              |              |               |               |

## Technical Data

| Battery Module Model                      |                | GHR-314                          |               |               |               |               |               |
|-------------------------------------------|----------------|----------------------------------|---------------|---------------|---------------|---------------|---------------|
| Main Parameter                            |                |                                  |               |               |               |               |               |
| Cell Chemistry                            |                | LiFePO4                          |               |               |               |               |               |
| Module Energy (kWh)                       |                | 16.076                           |               |               |               |               |               |
| Module Nominal Voltage (V)                |                | 51.2                             |               |               |               |               |               |
| Module Capacity (Ah)                      |                | 314                              |               |               |               |               |               |
| ITEM                                      |                | GHR-314-E160                     | GHR-314-E176  | GHR-314-E192  | GHR-314-209   | GHR-314-E225  | GHR-314-E241  |
| Battery Module Qty In Series ( Optional ) |                | 10                               | 11            | 12            | 13            | 14            | 15            |
| System Nominal Voltage (V)                |                | 512.0                            | 563.2         | 614.4         | 665.6         | 716.8         | 768.0         |
| System Operating Voltage (V)              |                | 448V~568V                        | 493V~625V     | 538V~682V     | 582V~738V     | 627V~795V     | 672V~852V     |
| System Energy (kWh)                       |                | 160.76                           | 176.84        | 192.92        | 209.00        | 225.08        | 241.15        |
| System Usable Energy (kWh) 90%            |                | 144.69                           | 159.16        | 173.63        | 188.10        | 202.57        | 217.03        |
| Charge/Discharge                          | Nominal        | 157A                             |               |               |               |               |               |
| Current(A)                                | Peak Discharge | 157A                             |               |               |               |               |               |
| Other Parameter                           |                |                                  |               |               |               |               |               |
| Thermal Management                        |                | Smart fan cooling                |               |               |               |               |               |
| LCD Display                               |                | SOC/ Voltage/Tem/Time/Fault Code |               |               |               |               |               |
| Working Temperature (°C)                  |                | Charge:0~55/Discharge :-20-55    |               |               |               |               |               |
| Status Indicator                          |                | Wake Up/Power light              |               |               |               |               |               |
| Communication Port                        |                | CAN/RS485                        |               |               |               |               |               |
| Humidity                                  |                | 5%~85%RH                         |               |               |               |               |               |
| Altitude                                  |                | ≤2000m                           |               |               |               |               |               |
| IP Rating of Enclosure                    |                | IP20                             |               |               |               |               |               |
| Dimension (W*D*H, mm)                     |                | 1184*838*1480                    | 1184*838*1736 | 1184*838*1992 | 1184*838*1992 | 1184*838*2248 | 1184*838*2248 |
| Weight Approximate (kg)                   |                | 1285kg                           | 1400kg        | 1533kg        | 1647kg        | 1781kg        | 1895kg        |
| Installation Location                     |                | Rack Mounting                    |               |               |               |               |               |
| Storage Temperature (°C)                  |                | 0~35°C                           |               |               |               |               |               |
| Recommend Depth of Discharge              |                | 90%                              |               |               |               |               |               |
| Cycle Life                                |                | 25±2°C, 0.5C/0.5C, DOD80%≥6000   |               |               |               |               |               |
| Warranty                                  |                | 10 years                         |               |               |               |               |               |
| Certification                             |                | CE/UN38.3/MSDS                   |               |               |               |               |               |

## System Components

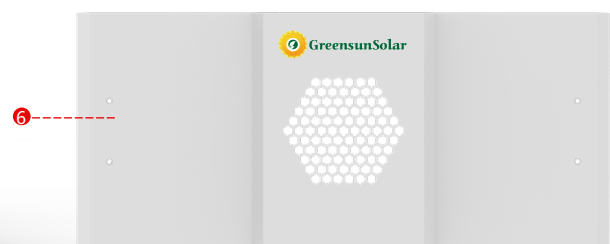
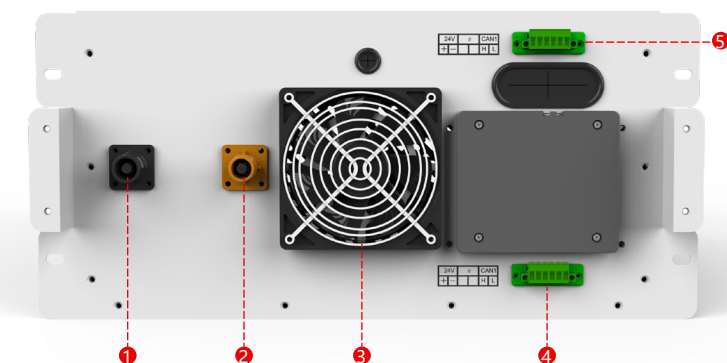
| Model                            | HVB-R-314                 |
|----------------------------------|---------------------------|
| Name                             | High Voltage Control Box  |
| Operating Voltage                | 200~1000Vdc               |
| Nominal Charge/Discharge Current | 157A                      |
| Operating Temperature            | -20~60°C                  |
| Ingress Protection               | IP20                      |
| AC Input Rating                  | 220±10%VAC/2A             |
| Details                          | 502×210×460mm(W×H×D),25kg |



- ① Handle
- ② B-: Battery common negative connection position (Black)
- ③ B+: Battery common positive connection position (Orange)

- ④ Wake-up Switch
- ⑤ On/Off Switch
- ⑥ Power Indicator
- ⑦ Battery Screen: Display battery SOC, Voltage, Current and Temperature, Time, Fault code
- ⑧ Providing 24VDC power for the cooling fan and Communicative connection with the first battery module
- ⑨ PCS Communication Port: Connect with PCS/Inverter
- ⑩ IN Port for parallel
- ⑪ Out Port for parallel
- ⑫ Connection Position Of PCS Negative Pole (Black)
- ⑬ Connection Position Of PCS Positive Pole (Orange)
- ⑭ Wireless Antenna
- ⑮ Connection to the battery rack and the ground point

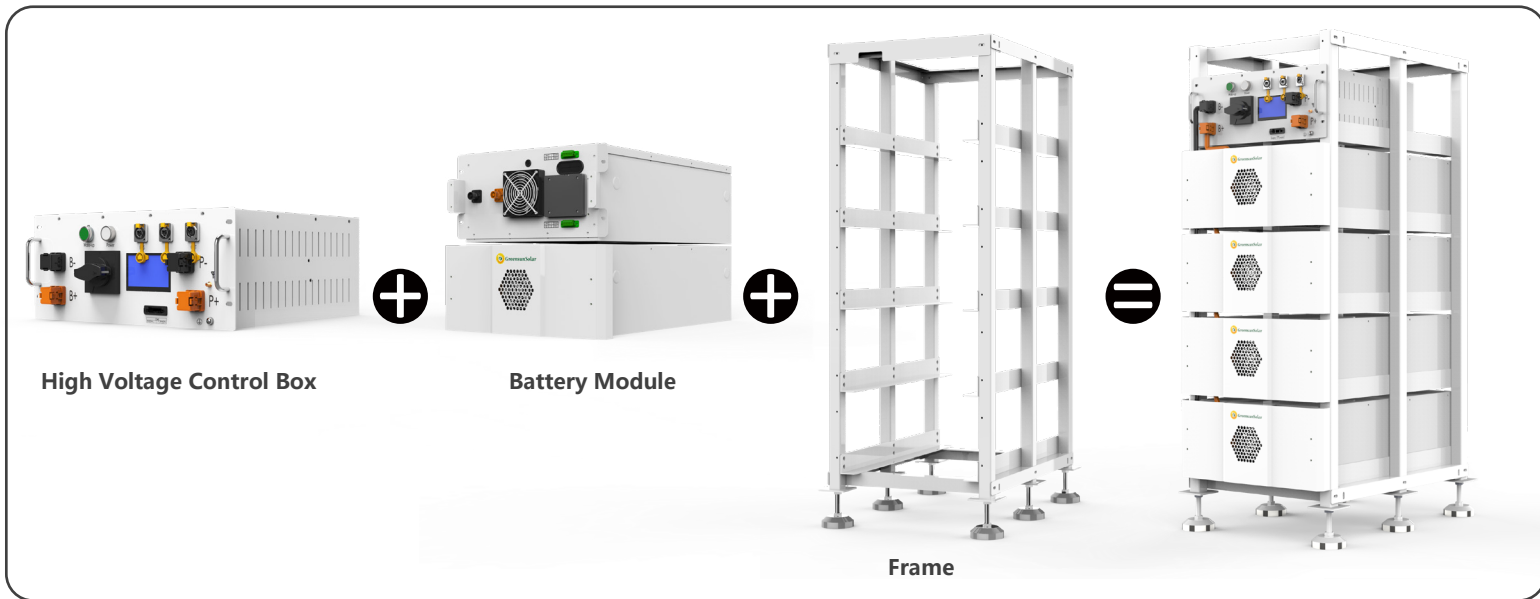
| Model                            | GHR-314                    |
|----------------------------------|----------------------------|
| Name                             | Battery Module             |
| Nominal Capacity                 | 314Ah                      |
| Nominal Energy                   | 16.078kWh                  |
| Nominal Voltage                  | 51.2Vdc                    |
| Nominal Charge/Discharge Current | 157A                       |
| Ingress Protection               | IP20                       |
| Operating Temperature(Charge)    | 0~55°C                     |
| Operating Temperature(Discharge) | -20~55°C                   |
| Storage Temperature              | 0~35°C                     |
| Details                          | 532×233×801mm(W×H×D),114kg |



- ① B-: Battery module negative pole (black)
- ② B+: Battery module positive pole (orange)
- ③ Fan: Ventilation and heat dissipation
- ④⑤ Connection position of battery module communication and power supply output
- ⑥ Dust guard/dust guard



## System Components



## All-in-one Energy & Device Management Platform

