







# POWERHUB

High Voltage All-In-One Hybrid ESS

## Introducing the Powerhub by Sunsynk Mobile.

-  Rated power operation the maximum temperature of the battery is less than 40°C.
-  Suitable for high rate cyclic charging and discharging scenarios.
-  Combustible gas, smoke and temperature detection, system active exhaust, and fire alarm.
-  EMS, hybrid inverter and BMS integrated technology, power supply redundancy design, supports black start function, off-grid operation etc.
-  Lithium Iron Phosphate (LFP) battery, the battery pack and system adopt an aerosol fire extinguishing solution.
-  Supports battery expansion, with a maximum capacity of 360kWh.



| Model                                | Powerhub                               |
|--------------------------------------|--|
| <b>System Specification</b>          |  |
| Nominal Output Power/UPS Power (W)   | 50000                                  |
| AC Output Frequency and Voltage      | 50/60Hz; 3L/N/PE 220/380, 230/400Vac   |
| Grid Type                            | Three Phase                            |
| Energy Configuration (kWh)           | 61.4                                   |
| Dimension (WxDxH mm)                 | 735x1045x2235 (not including inverter) |
| Weight Appr. (kg)                    | 1015 (battery) + 80 (inverter)         |
| AC Output Rated Current (A)          | 75.8                                   |
| Battery Operating Voltage (V)        | 500 ~ 700                              |
| Max. Charging/Discharging Efficiency | 91%                                    |
| Battery Chemistry                    | LiFePO <sub>4</sub>                    |
| IP Rating of Enclosure               | IP55                                   |
| Installation Style                   | Floor-Mounted                          |

| <b>Inverter Technical Specification</b> |   |
|---|---|
| Max. PV Input Power (W)                 | 65000   |
| Max. PV Input Current (A)               | 36+36+36+36   |
| Rated PV Input Voltage (Vdc)            | 600   |
| Start Up DC Voltage (Vdc)               | 180   |
| MPPT Voltage Range (Vdc)                | 150-850   |
| Max. PV Short-circuit Current (A)       | 55+55+55+55   |
| Number of MPPT                          | 4   |
| Peak Power (Off Grid)                   | 1.5 time of rated power, 10s  |
| Power Factor                            | 0.8 leading to 0.8 lagging  |
| THD                                     | <3%   |
| DC Injection Current (mA)               | <0.5%In   |
| Display                                 | LCD   |
| Operating Temperature Range (°C)        | -40 ~ 60 ( >45°C derating)  |
| Relative Humidity                       | 15% ~ 85% (no condensing)   |
| Dimension (WxDxH mm)                    | 527x294x894   |
| Inverter Communication                  | CAN, RS485, WIFI, ETH   |
| Safety EMC / Standard                   | IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4          |
| Grid Regulation                         | VDE4105, IEC61727/62116, VDE0126, AS4777.2, CEI 0 21, EN50549-1, G98, G99, C10-11, UNE217002, NBR16149/NBR16150 |
| Max. Efficiency                         | 97.6%   |
| MPPT Efficiency                         | 99.9%   |
| <b>Battery Technical Specification</b>  |   |
| Battery Module Nominal Voltage (V)      | 51.2  |
| Battery Module Energy (kWh)             | 5.12  |
| BMS Communication                       | CAN   |
| Battery Module Dimension (WxDxH mm)     | 440x570x133   |
| Battery Module Weight (kg)              | 44  |
| Operating Temperature Range             | Charge: 0~55°C / Discharge: -20°C~55°C  |
| Cycle Life                              | ≥6000 (@25°C±2°C, 0.5C/0.5C, 70%EOL)  |
| Battery Module Certification            | CE, IEC62619, IEC62040, UN38.3  |

PRODUCT EXPANSION

MAX: 50kW/360kWh



MAX: 300kW/360kWh



...

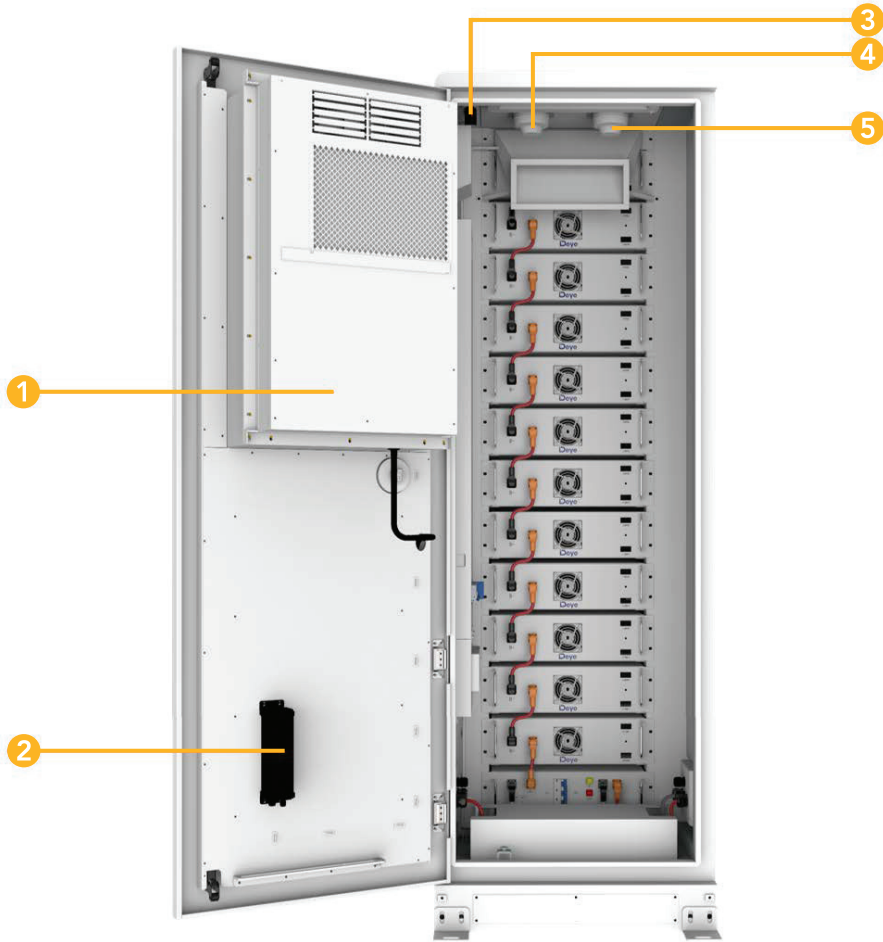


1

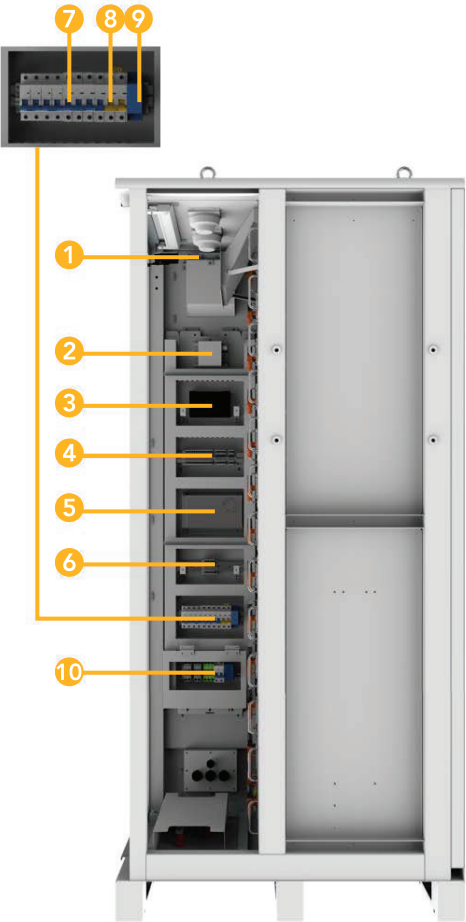
n

5

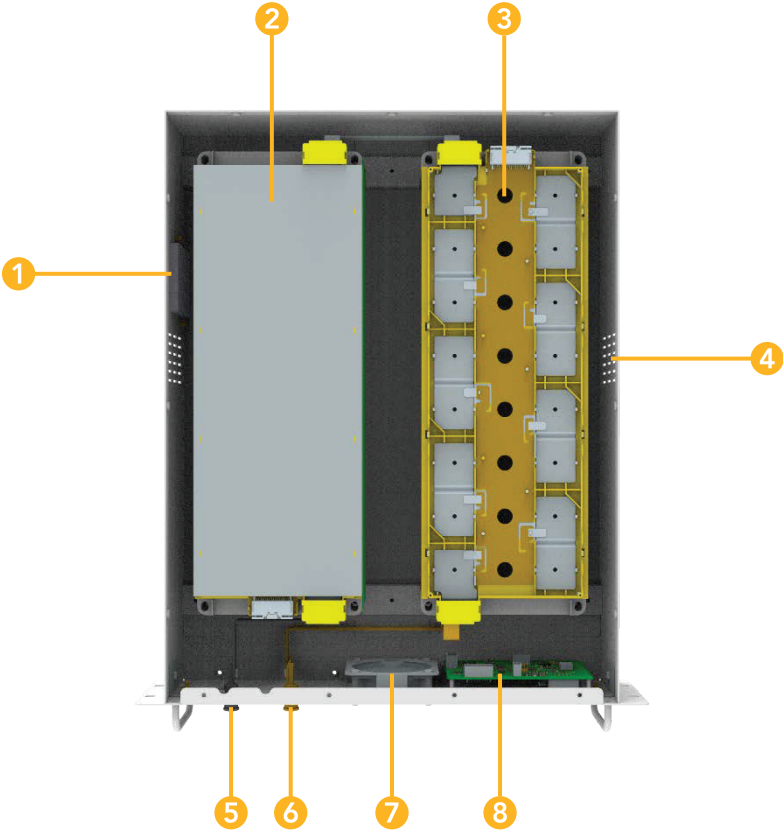
6



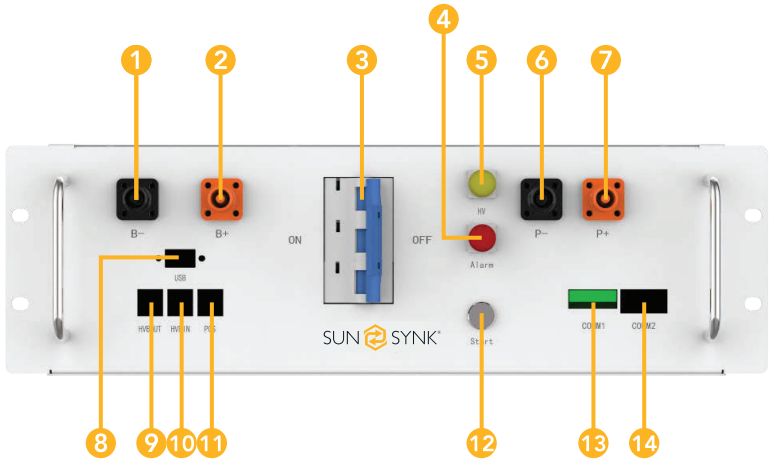
|   |   |
|---|---|
| <p><b>1</b> Air Conditioner</p>                 | <p>Cooling the BESS.</p>  |
| <p><b>2</b> Aerosol Fire Suppression Device</p> | <p>When the BESS is detected to be on fire, aerosol is emitted to extinguish the fire.</p>          |
| <p><b>3</b> Travel Switch</p>                   | <p>Check whether the BESS's door is closed.</p>   |
| <p><b>4</b> Smoke Detector</p>                  | <p>A device used to detect smoke in a fire and sound an alarm when smoke is detected.</p>           |
| <p><b>5</b> Heat Detector</p>                   | <p>A device used to measure temperature and sound an alarm if it detects excessive temperature.</p> |



|                                      |  |
|--------------------------------------|--|
| <b>1</b> Fan                         | Emission of combustible gas.                                 |
| <b>2</b> Combustible Gas Sensor      | Detect combustible gases.                                    |
| <b>3</b> Serial Relay                | Control system.  |
| <b>4</b> Terminal Line               | For connecting cables.                                       |
| <b>5</b> Switching Mode Power Supply | Power source.  |
| <b>6</b> Terminal Line               | For connecting cables.                                       |
| <b>7</b> Miniature Circuit Breaker   | Controlled power-on and power-off.                           |
| <b>8</b> Relay                       | Automatic regulation, safety protection, conversion circuit. |
| <b>9</b> Water Immersion Sensor      | Check the ESS for water leakage.                             |
| <b>10</b> Terminal Line              | Connect external cables.                                     |



|   |  |
|---|--|
| <p><b>1</b> Aerosol Fire Extinguishing Device</p> | <p>When the pack is detected to be on fire, aerosol is emitted to extinguish the fire.</p> |
| <p><b>2</b> Battery Module</p>                    | <p>Provides electrical energy storage and output.</p>                                      |
| <p><b>3</b> CCS</p>                               | <p>Cells Contact System.</p>   |
| <p><b>4</b> Air Inlet</p>                         | <p>Cold air inlet.</p>   |
| <p><b>5</b> Battery negative -</p>                | <p>/</p>   |
| <p><b>6</b> Battery positive +</p>                | <p>/</p>   |
| <p><b>7</b> Fan</p>                               | <p>Promote internal and external air flow.</p>   |
| <p><b>8</b> BMU</p>                               | <p>Battery monitoring.</p>   |



|                                      |  |
|--------------------------------------|--|
| <p><b>1</b> B-</p>                   | <p>Connection position of the common negative pole of the battery.</p>   |
| <p><b>2</b> B+</p>                   | <p>Connection position of the common positive pole of the battery.</p>   |
| <p><b>3</b> Air Switch</p>           | <p>Used to manually control the connection between the battery rack and external devices.</p>                          |
| <p><b>4</b> ALRM Light Indicator</p> | <p>Battery system fault alarm indicator.</p>   |
| <p><b>5</b> HV Light Indicator</p>   | <p>High-voltage hazard indicator.</p>  |
| <p><b>6</b> PCS-</p>                 | <p>Connection position of PCS negative pole.</p>   |
| <p><b>7</b> PCS+</p>                 | <p>Connection position of PCS positive pole.</p>   |
| <p><b>8</b> USB</p>                  | <p>BMS upgrade interface and storage expansion interface.</p>  |
| <p><b>9</b> OUT COM</p>              | <p>Connection position with next HVB-100A 750V communication output.</p>   |
| <p><b>10</b> IN COM</p>              | <p>Connection position with previous HVB-100A750V communication input.</p>   |
| <p><b>11</b> PCS COM</p>             | <p>Communication interface with charging and discharging equipment.</p>  |
| <p><b>12</b> START</p>               | <p>A start switch of 12VDC power inside the high-voltage control box.</p>  |
| <p><b>13</b> COMM1</p>               | <p>Communicative connection with the cabinet.</p>  |
| <p><b>14</b> COMM2</p>               | <p>Communicative connection with the first battery module; and providing 12VDC power for the first battery module.</p> |