



sunv<sup>o</sup>lt

# ENERGY STORAGE SOLUTION

Energy Solutions  
by Panasonic

## SUNVOLT ENERGY STORAGE SYSTEM



Outdoor Installation



Backup Power



Integrated Isolators



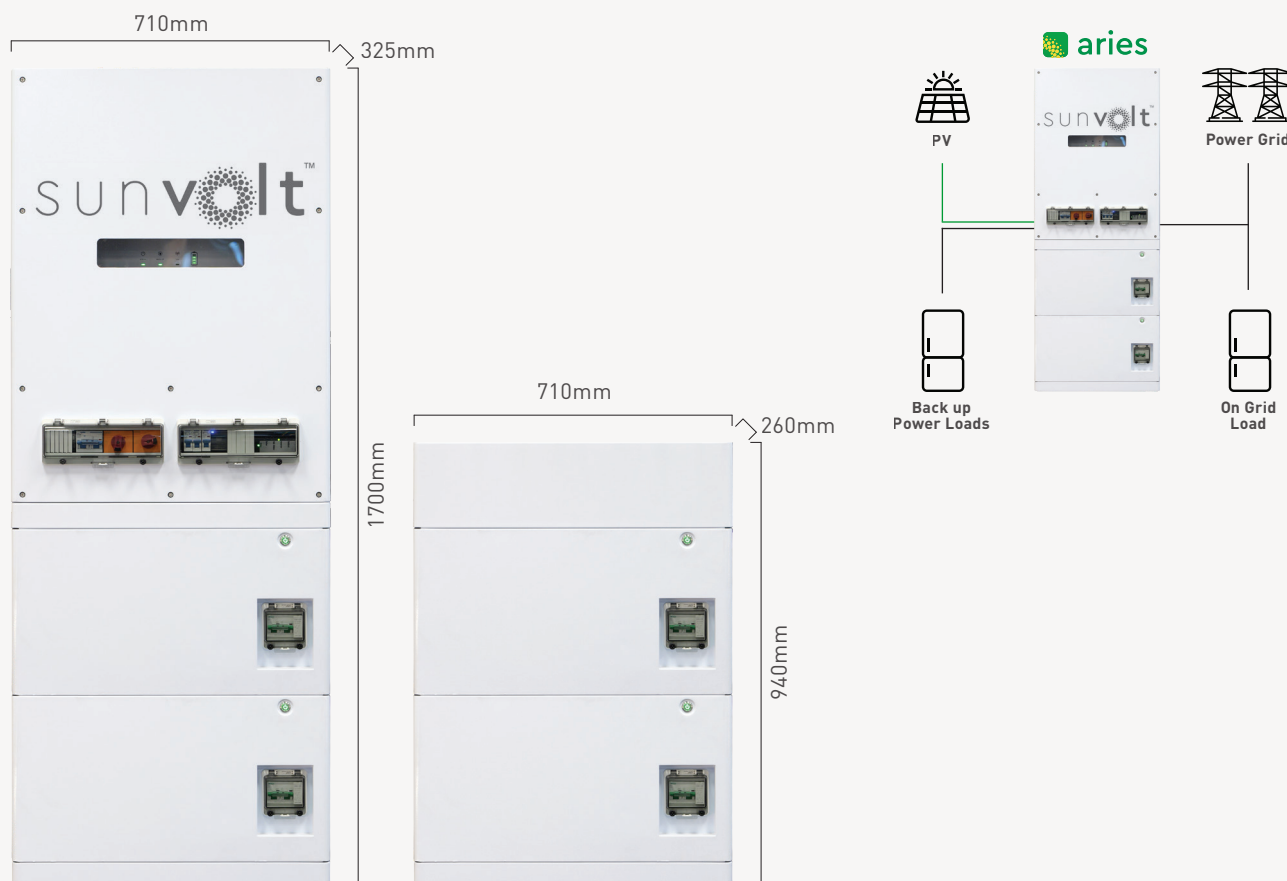
Pre-wired



Mobile App



## HOW IT WORKS



## TECHNICAL SPECIFICATIONS

| SUNVOLT LV ESS Parameters                  | SV-LV ESS G3 5.4-1 (5.37kWh)             | SV-LV ESS G3 10.8-1 (10.74kWh) | SV-LV ESS G3 16.2-1 (16.11kWh) | SV-LV ESS G3 21.6-1 (21.48kWh) |
|--------------------------------------------|------------------------------------------|--------------------------------|--------------------------------|--------------------------------|
| PV String Input Data                       |                                          |                                |                                |                                |
| Max. Input Power [W] <sup>*1</sup>         | 7500                                     |                                |                                |                                |
| Max. Input Voltage [V]                     | 600                                      |                                |                                |                                |
| MPPT Operating Voltage Range[V]            | 60-550                                   |                                |                                |                                |
| MPPT Voltage Range at Nominal Power [V]    | 200-500                                  |                                |                                |                                |
| Start-up Voltage [V]                       | 58                                       |                                |                                |                                |
| Nominal Input Voltage [V]                  | 360                                      |                                |                                |                                |
| Max. Input Current per MPPT [A]            | 16                                       |                                |                                |                                |
| Max. Short Circuit Current per MPPT [A]    | 23                                       |                                |                                |                                |
| Max. Backfeed Current to The Array [A]     | 0                                        |                                |                                |                                |
| Number of MPP Trackers                     | 2                                        |                                |                                |                                |
| Number of Strings per MPPT                 | 1                                        |                                |                                |                                |
| Battery Input Data                         |                                          |                                |                                |                                |
| Battery Parameters                         | 1×Battery System                         | 2×Battery System               | 3×Battery System               | 4×Battery System               |
| Rated Energy [kWh]                         | 5.37                                     | 10.74                          | 16.11                          | 21.48                          |
| Usable Energy [kWh] <sup>*2</sup>          | 4.83                                     | 9.66                           | 14.49                          | 19.32                          |
| Cell Type                                  | LFP (LiFePO4)                            |                                |                                |                                |
| Cell Configuration                         | 16S1P                                    | 16S2P                          | 16S3P                          | 16S4P                          |
| Rated Voltage [V]                          | 51.2                                     |                                |                                |                                |
| Operating Voltage Range [V]                | 47.5-57.6                                |                                |                                |                                |
| Nominal Dis-/Charge Current [A]            | 50A                                      | 50A                            | 50A                            | 50A                            |
| Max. Dis-/Charge Current [A] <sup>*3</sup> | 50A (100A@15min)                         | 100A                           | 100A                           | 100A                           |
| Max. Discharge Power[kW] <sup>*3</sup>     | 5.3                                      | 5.3                            | 5.3                            | 5.3                            |
| Communication                              | CAN&RS485                                |                                |                                |                                |
| Battery Weight [kg]                        | 53 (1 pack)                              | 106 (2 packs)                  | 159 (3 packs)                  | 212 (4 packs)                  |
| Battery Dimensions [W×H×D] [mm]            | 650×390×260                              | 650×390×260 ×2(Non-stack size) | 650×390×260 ×3(Non-stack size) | 650×390×260×4(Non-stack size)  |
| Operating Temperature[ °C]                 | Charge: 0~+50; Discharge: -10~+50        |                                |                                |                                |
| Storage temperature [ °C]                  | -20~+40 [≤One Month] ; 0~+35 [≤One Year] |                                |                                |                                |
| Relative Humidity                          | 0~95%                                    |                                |                                |                                |
| Max. Operating Altitude [m]                | 2000                                     |                                |                                |                                |
| Protection Degree                          | IP55 (Outdoor / Indoor, Battery stack)   |                                |                                |                                |
| Standard and Certification                 | Safety, EMC , UN38.3                     |                                |                                |                                |

| AC Output Data (On-grid)                           |                                                                                |              |                                          |                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------|--------------|------------------------------------------|------------------------------------------|
| Nominal Apparent Power Output to Utility Grid (VA) | 5,000                                                                          |              |                                          |                                          |
| Max. Apparent Power Output to Utility Grid (VA)    | 5,000                                                                          |              |                                          |                                          |
| Nominal Apparent Power from Utility Grid (VA)      | 5000                                                                           |              |                                          |                                          |
| Nominal Output Voltage (V)                         | 220/230/240                                                                    |              |                                          |                                          |
| Output Voltage Range (V)                           | 170~280                                                                        |              |                                          |                                          |
| Nominal AC Grid Frequency (Hz)                     | 50/60                                                                          |              |                                          |                                          |
| AC Grid Frequency Range (Hz)                       | 45~55 / 55~65                                                                  |              |                                          |                                          |
| Max. AC Current Output to Utility Grid (A)         | 22.7                                                                           |              |                                          |                                          |
| Max. AC Current From Utility Grid (A)              | 43.5                                                                           |              |                                          |                                          |
| Nominal AC Current From Utility Grid (A)           | 21.7                                                                           |              |                                          |                                          |
| Max. Output Fault Current (Peak and Duration) (A)  | 96A@3μs                                                                        |              |                                          |                                          |
| Inrush Current (Peak and Duration) (A)             | 96A@3μs                                                                        |              |                                          |                                          |
| Nominal Output Current (A)                         | 21.7                                                                           |              |                                          |                                          |
| Power Factor                                       | ~1 (Adjustable from 0.8 leading to 0.8 lagging)                                |              |                                          |                                          |
| Max. Total Harmonic Distortion                     | <3%                                                                            |              |                                          |                                          |
| Maximum Output Overcurrent Protection (A)          | 80                                                                             |              |                                          |                                          |
| Type of Voltage (a.c. or d.c.)                     | a.c.                                                                           |              |                                          |                                          |
| AC Output Data (Back-up)                           |                                                                                |              |                                          |                                          |
| Back-up Nominal Apparent Power (VA)                | 5000                                                                           |              |                                          |                                          |
| Nominal Output Current (A)                         | 21.7                                                                           |              |                                          |                                          |
| Max. Output Current (A)                            | 22.7                                                                           |              |                                          |                                          |
| Max. Output Fault Current (Peak and Duration) (A)  | 96A@3μs                                                                        |              |                                          |                                          |
| Inrush Current (Peak and Duration) (A)             | 96A@3μs                                                                        |              |                                          |                                          |
| Maximum Output Overcurrent Protection (A)          | 80                                                                             |              |                                          |                                          |
| Nominal Output Voltage (V)                         | 220/230/240                                                                    |              |                                          |                                          |
| Nominal Output Frequency (Hz)                      | 50/60                                                                          |              |                                          |                                          |
| Output THDv (@Linear Load)                         | <3%                                                                            |              |                                          |                                          |
| Efficiency                                         |                                                                                |              |                                          |                                          |
| Max. Efficiency                                    | 97.60%                                                                         |              |                                          |                                          |
| European Efficiency                                | 96.70%                                                                         |              |                                          |                                          |
| CEC Efficiency                                     | 96.90%                                                                         |              |                                          |                                          |
| Max. Battery to AC Efficiency                      | 95.50%                                                                         |              |                                          |                                          |
| MPPT Efficiency                                    | 99.90%                                                                         |              |                                          |                                          |
| Protection                                         |                                                                                |              |                                          |                                          |
| PV String Current Monitoring                       | Integrated                                                                     |              |                                          |                                          |
| PV Insulation Resistance Detection                 | Integrated                                                                     |              |                                          |                                          |
| Residual Current Monitoring                        | Integrated                                                                     |              |                                          |                                          |
| PV Reverse Polarity Protection                     | Integrated                                                                     |              |                                          |                                          |
| Anti-islanding Protection                          | Integrated                                                                     |              |                                          |                                          |
| AC Overcurrent Protection                          | Integrated                                                                     |              |                                          |                                          |
| AC Short Circuit Protection                        | Integrated                                                                     |              |                                          |                                          |
| AC Overvoltage Protection                          | Integrated                                                                     |              |                                          |                                          |
| DC Switch                                          | Integrated                                                                     |              |                                          |                                          |
| DC Surge Protection                                | Type II                                                                        |              |                                          |                                          |
| AC Surge Protection                                | Type III                                                                       |              |                                          |                                          |
| AFCI                                               | Optional                                                                       |              |                                          |                                          |
| Remote Shutdown                                    | Integrated                                                                     |              |                                          |                                          |
| General Data                                       |                                                                                |              |                                          |                                          |
| Operating Temperature Range [ ]* <sup>4</sup>      | -25~50                                                                         |              |                                          |                                          |
| Relative Humidity                                  | 0~95%                                                                          |              |                                          |                                          |
| Max. Operating Altitude(m)                         | 2000                                                                           |              |                                          |                                          |
| Cooling Method                                     | Natural Convection                                                             |              |                                          |                                          |
| User Interface                                     | LED,WLAN+APP                                                                   |              |                                          |                                          |
| Communication with BMS                             | CAN                                                                            |              |                                          |                                          |
| Communication with Meter                           | RS485                                                                          |              |                                          |                                          |
| Communication with Portal                          | WiFi / WiFi+LAN / 4G                                                           |              |                                          |                                          |
| Weight (kg)                                        | 115.5                                                                          | 168.5        | Left: 168.5<br>Right: 68                 | Left: 168.5<br>Right: 121                |
| Dimension (W×H×D mm)                               | 710×1360×325                                                                   | 710×1700×325 | Left: 710×1700×325<br>Right: 710×600×260 | Left: 710×1700×325<br>Right: 710×940×260 |
| Topology                                           | Non-isolated                                                                   |              |                                          |                                          |
| Ingress Protection Rating                          | Decorated Enclosure: IP43, Electrical Enclosure: IP65, Battery Enclosure: IP55 |              |                                          |                                          |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| Environmental Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4K4H                                                                   |
| Pollution Degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | III                                                                    |
| Overvoltage Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DC II / AC III                                                         |
| Protective Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I                                                                      |
| Storage Temperature ( )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Battery : -20~+40(≤One Month) ; 0~+35(≤One Year)<br>Inverter : -40~+85 |
| The Decisive Voltage Class(DVC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Battery: A<br>PV: C<br>AC: C<br>Com: A                                 |
| Installation Location                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Wall Mounted & Grounded                                                |
| Type of Electrical Supply System                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | single phase                                                           |
| Active Anti-islanding Method*5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | AFDPF + AQDPF *5                                                       |
| Country of Manufacture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | China                                                                  |
| <p>*1 The max power is the actual power of PV.</p> <p>*2 Usable Energy (kWh)* : Test conditions, 90% DOD, 0.5C charge &amp; discharge at +25±2 °C for battery system at beginning life. System Usable Energy may vary with different Inverter.</p> <p>*3 Max. Continuous Discharge Current*/Power* : Max. Continuous Charge/Discharge and power derating will occur related to Temperature and SOC.</p> <p>*4 Operating Temperature Range ( )*: When the temperature is lower than 0 °C, the battery will stop charging. When the temperature is lower than -10 °C, the battery will stop discharging. The PV and AC are running properly.</p> <p>*5 AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.</p> |                                                                        |

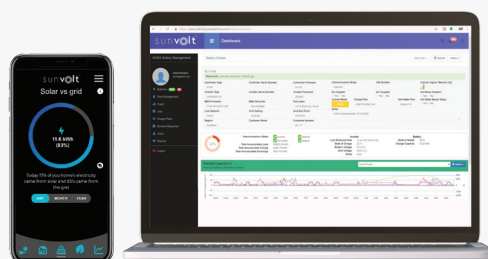
## MONITORING

Sunvolt ARIES is a web based application designed for customers to control and monitor Energy Storage Systems. They can view system information over the course of a day, week, month or year, without interfering with how the system is being operated.

Early Intelligent Device Failure Detection for Zero Downtime

Data Analytics for Performance Improvement and Diagnosis

Easy Management with Real Time Alerts and Reports



## WARRANTY

10 Year Warranty. Terms & Conditions apply.

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