



# FlexCore-OD

## 48-253kWh Outdoor Stackable Energy Storage System (ESS)

**Simple** Installation, **Flexible** Expansion  
Scalable Energy Storage Solutions

- Uses A+ grade cells,  $\geq 8,000+$  cycle life <sup>①</sup>
- Five-layer hardware redundancy safety protection as standard
- Supports a max. 21A string input current, perfectly matching high-power PV modules
- Supports 200% PV oversizing, maximizing solar energy utilization
- Supports 160% overload for 200ms in off-grid mode
- Supports seamless on-grid and off-grid switching with transfer times  $< 10\text{ms}$
- Supports fast charging with a max. charging current of 200A
- Designed for all environments: IP66 protection & C5-M anti-corrosion
- Intelligent thermal management with standard battery heating and active cooling, operable from  $-20^{\circ}\text{C}$  to  $55^{\circ}\text{C}$
- Dual independent battery ports, supporting mixing of different brands, capacities, and old/new batteries
- 12kWh per pack, supports up to 6 clusters in parallel, max. expandable to 1518kWh
- Dedicated VPP communication channel, plug-and-play direct connection to third-party EMS/VPPs with an open protocol
- Solis AI – smart energy management with generator support
- High-voltage series stackable system for easy installation
- Supports OTA remote upgrades for efficient operation and maintenance

FlexCore-OD 253kWh ESS

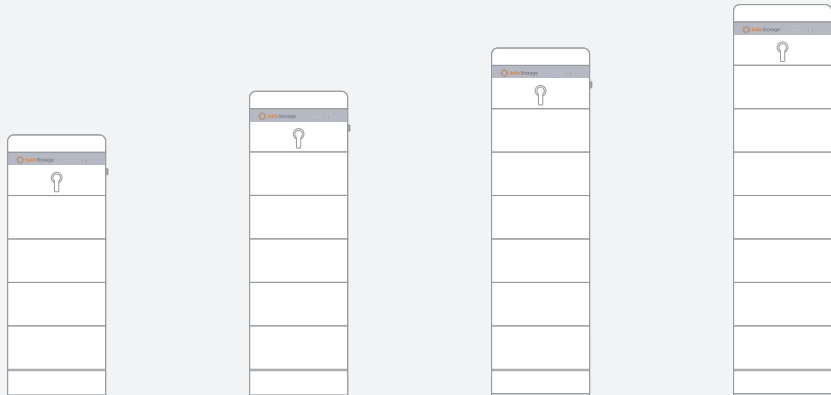


# DATASHEET

## FlexCore Outdoor Stackable Series

| Hybrid Inverter                              | S6-EH3P<br>30K-H(21A)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | S6-EH3P<br>40K-H(21A) | S6-EH3P<br>50K-H(21A) | S6-EH3P<br>60K-H(21A) | S6-EH3P<br>80K10-NV-YD-H | S6-EH3P<br>100K10-NV-YD-H | S6-EH3P<br>125K10-NV-YD-H |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|-----------------------|--------------------------|---------------------------|---------------------------|
| Input DC (PV side)                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Recommended max. PV array size               | 60 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 80 kW                 | 100 kW                | 100 kW                | 160 kW                   | 200 kW                    | 250 kW                    |
| Max. usable PV input power                   | 60 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 80 kW                 | 100 kW                | 100 kW                | 160 kW                   | 200 kW                    | 250 kW                    |
| Max. input voltage                           | 1000 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                       |                       |                       |                          |                           |                           |
| Rated voltage                                | 600 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       |                          |                           |                           |
| Start-up voltage                             | 180 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       |                          |                           |                           |
| MPPT voltage range                           | 150 - 850 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                       |                       | 150 - 950 V              |                           |                           |
| Max. input current                           | 3 × 42 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4 × 42 A              |                       |                       | 10 × 42 A                |                           |                           |
| Max. current per DC input                    | 42 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Max. short circuit current                   | 3 × 60 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4 × 60 A              |                       |                       | 10 × 60 A                |                           |                           |
| MPPT number / Max. input strings number      | 3 / 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 4 / 8                 |                       |                       | 10 / 20                  |                           |                           |
| Battery                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Battery type                                 | Li-ion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                       |                       |                       |                          |                           |                           |
| Battery voltage range                        | 150 - 800 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                       |                       | 300 - 950 V              |                           |                           |
| Max. charge / discharge current              | 80 A × 2 / 80 A × 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                       | 84 A × 2 / 84 A × 2   |                          | 100 A × 2 / 100 A × 2     |                           |
| Number of battery port / Number of BMS port  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                       |                       |                          |                           |                           |
| Max. charge / discharge current of each port | 80 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       | 84 A                  |                          | 100 A                     |                           |
| Communication                                | CAN / RS485                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                       |                       |                          |                           |                           |
| Output AC (Grid side)                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Rated output power                           | 30 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 40 kW                 | 50 kW                 | 60 kW                 | 80 kW                    | 100 kW                    | 125 kW                    |
| Max. apparent output power                   | 30 kVA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 40 kVA                | 50 kVA                | 60 kVA                | 80 kVA                   | 100 kVA                   | 125 kVA                   |
| Rated grid voltage                           | 3/N/PE, 220 V / 380 V, 230 V / 400 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Rated grid frequency                         | 50 Hz / 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                       |                       |                          |                           |                           |
| Rated grid output current                    | 45.6 A / 43.3 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 60.8 A / 57.7 A       | 76 A / 72.2 A         | 91.2 A / 86.6 A       | 121.6 A / 115.5 A        | 151.9 A / 144.3 A         | 189.9 A / 180.4 A         |
| Power factor                                 | > 0.99 (0.8 leading - 0.8 lagging)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       |                       |                       |                          |                           |                           |
| THDi                                         | < 3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Input AC (Grid side)                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Max. input power                             | 60 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 60 kW                 | 100 kW                | 100 kW / 105 kW       | 160 kW                   | 164.5 kW / 173.2 kW       | 164.5 kW / 173.2 kW       |
| Input voltage range                          | 304 - 460 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                       |                       |                          |                           |                           |
| Max. input current                           | 91.2 A / 86.6 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 121.6 A / 115.4 A     | 152 A / 144.4 A       | 152 A / 152 A         | 250 A                    |                           |                           |
| Output AC (Back-up)                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Rated output power                           | 30 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 40 kW                 | 50 kW                 | 60 kW                 | 80 kW                    | 100 kW                    | 125 kW                    |
| Max. apparent output power                   | 30-60K: 1.6 times of rated power, 2 s; 1.5 times of rated power, 10 s;<br>80-100K: 1.6 times of rated power, 10 s; 2 times of rated power, 200 ms;<br>125K: 1.4 times of rated power, 10 s; 1.6 times of rated power, 200 ms                                                                                                                                                                                                                                                                                                     |                       |                       |                       |                          |                           |                           |
| Back-up switch time                          | < 10 ms                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                       |                       |                          |                           |                           |
| Rated output voltage                         | 3/N/PE, 220 V / 380 V, 230 V / 400 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Rated frequency                              | 50 Hz / 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                       |                       |                          |                           |                           |
| Rated output current                         | 45.6 A / 43.3 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 60.8 A / 57.7 A       | 76 A / 72.2 A         | 91.2 A / 86.6 A       | 121.6 A / 115.5 A        | 151.9 A / 144.3 A         | 189.9 A / 180.4 A         |
| Max. AC passthrough current                  | 45.6 A / 43.3 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 60.8 A / 57.7 A       | 76 A / 72.2 A         | 91.2 A / 86.6 A       | 121.6 A / 115.5 A        | 151.9 A / 144.3 A         | 189.9 A / 180.4 A         |
| THDv (@linear load)                          | < 2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       | < 3%                     |                           |                           |
| Input AC (Generator side)                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Max. input power                             | 30 kW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 40 kW                 | 50 kW                 | 60 kW                 | 80 kW                    | 100 kW                    | 125 kW                    |
| Rated input current                          | 45.6 A / 43.3 A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 60.8 A / 57.7 A       | 76 A / 72.2 A         | 91.2 A / 86.6 A       | 121.6 A / 115.5 A        | 151.9 A / 144.3 A         | 189.9 A / 180.4 A         |
| Rated input voltage                          | 3/N/PE, 220 V / 380 V, 230 V / 400 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Rated input frequency                        | 50 Hz / 60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                       |                       |                          |                           |                           |
| Efficiency                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Max. efficiency                              | 97.7%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       | 97.5%                    |                           |                           |
| EU efficiency                                | 97.3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       | 96.9%                    | 97.1%                     | 97.2%                     |
| BAT charged by PV / AC max. efficiency       | 98.5% / 97.8%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                       |                       | 98.2% / 97.0%            |                           |                           |
| Battery discharged efficiency                | 97.5%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       | 97.0%                    |                           |                           |
| General Data                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Max. power per phase (grid & back-up)        | 33% rated power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Dimensions (W × H × D)                       | 530 × 880 × 290 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                       |                       |                       | 1174 × 814 × 400 mm      |                           |                           |
| Weight                                       | 76 kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |                       |                       | 170 kg                   |                           |                           |
| Inverter topology                            | Transformerless                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                       |                       |                          |                           |                           |
| Self-consumption                             | < 35 W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                       |                       |                       | < 45 W                   |                           |                           |
| Operating temperature range                  | -25 ~ +60°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                       |                       |                          |                           |                           |
| Relative humidity                            | 0 - 100%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |                       |                       |                          |                           |                           |
| Ingress protection                           | IP66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                       |                       |                          |                           |                           |
| Cooling concept                              | Intelligent redundant fan-cooling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                       |                       |                          |                           |                           |
| Max. operation altitude                      | 4000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                       |                       |                       | 3000 m                   |                           |                           |
| Grid connection standard                     | 30-60K: G99, VDE-AR-N 4105 / VDE V 0124, EN 50549-1/EN 50549-10, PTPIREE, VDE 0126 / XP C15/VFR:2019, NTS 631/RD 1699/RD 244 / UNE 217002, CEI 0-21, C10/11, NRS 097-2-1, TOR, EIFS 2018.2, IEC 62116, IEC 61727, DEWA, MEA, PEA, PORTARIA Nº 140/PORTARIA Nº 515;<br>80-125K: G99, VDE-AR-N 4105 / VDE V 0124, EN 50549-1&2/EN 50549-10, VDE 0126 / UTE C 15/VFR:2019, NTS 631/UNE 217001, CEI 0-21, C10/11, NRS 097-2-1, TOR, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA, PORTARIA Nº 140, PORTARIA Nº 515 |                       |                       |                       |                          |                           |                           |
| Safety / EMC standard                        | IEC/EN 62109-1/-2, IEC/EN 61000-6-2/-4, EN 55011                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                       |                       |                          |                           |                           |



| Battery                                         |                                                                                                                                                                                 | FlexCore-OD-(48-253)kWh |                     |                     |  |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|---------------------|--|
| Battery Pack                                    |                                                                                                                                                                                 |                         |                     |                     |  |
| Battery pack model                              | FlexCore-OD-BAT12kWh                                                                                                                                                            |                         |                     |                     |  |
| Battery type                                    | LiFePO <sub>4</sub>                                                                                                                                                             |                         |                     |                     |  |
| Cell capacity                                   | 314 Ah                                                                                                                                                                          |                         |                     |                     |  |
| Cycle life <sup>①</sup>                         | ≥ 8000                                                                                                                                                                          |                         |                     |                     |  |
| Depth of discharge                              | Max. 100% DOD                                                                                                                                                                   |                         |                     |                     |  |
| Configuration                                   | 1P12S                                                                                                                                                                           |                         |                     |                     |  |
| Rated voltage                                   | 38.4 V                                                                                                                                                                          |                         |                     |                     |  |
| Recommended charge & discharge current          | 157 A                                                                                                                                                                           |                         |                     |                     |  |
| Nominal energy                                  | 12.06 kWh                                                                                                                                                                       |                         |                     |                     |  |
| Fire suppression mode                           | Temperature sensor, Smoke detector, Pack level aerosol, explosion released valve, heat insulation pad between cells, foam insulation layer around the Pack, PC insulation sheet |                         |                     |                     |  |
| Dimensions (W × H × D)                          | 648 × 287 × 415 mm                                                                                                                                                              |                         |                     |                     |  |
| Weight                                          | 100 kg                                                                                                                                                                          |                         |                     |                     |  |
| Control Box                                     |                                                                                                                                                                                 |                         |                     |                     |  |
| Control box model                               | FlexCore-OD-CB250A                                                                                                                                                              |                         |                     |                     |  |
| Max. current                                    | 250 A                                                                                                                                                                           |                         |                     |                     |  |
| Dimensions (W × H × D)                          | 648 × 287 × 415 mm                                                                                                                                                              |                         |                     |                     |  |
| Weight                                          | 48 kg                                                                                                                                                                           |                         |                     |                     |  |
| Communication                                   | CAN / LAN / 4G / WIFI                                                                                                                                                           |                         |                     |                     |  |
| Cluster                                         |                                                                                                                                                                                 |                         |                     |                     |  |
| Cluster model                                   | FlexCore-OD-(48-253)kWh                                                                                                                                                         |                         |                     |                     |  |
| Number of packs in series                       | 4~21                                                                                                                                                                            |                         |                     |                     |  |
| Nominal energy per cluster                      | 48~253 kWh                                                                                                                                                                      |                         |                     |                     |  |
| Scalability                                     | Up to 6 units in parallel                                                                                                                                                       |                         |                     |                     |  |
| Recommended charge & discharge current          | 157 A                                                                                                                                                                           |                         |                     |                     |  |
| Recommended charge & discharge power rate       | 0.5P                                                                                                                                                                            |                         |                     |                     |  |
| Operating ambient temperature range             | Discharge: -20~55°C; Charge: -20~55°C (Smart heating function)                                                                                                                  |                         |                     |                     |  |
| Storage temperature range                       | -10~45°C                                                                                                                                                                        |                         |                     |                     |  |
| Relative humidity range                         | 0~100 %                                                                                                                                                                         |                         |                     |                     |  |
| Communication                                   | CAN / LAN / 4G / WIFI                                                                                                                                                           |                         |                     |                     |  |
| Max. operating altitude                         | 4000 m                                                                                                                                                                          |                         |                     |                     |  |
| Ingress protection                              | IP66                                                                                                                                                                            |                         |                     |                     |  |
| Cooling                                         | Smart fan-cooling                                                                                                                                                               |                         |                     |                     |  |
| Anti-corrosion class                            | C4 (C5 option)                                                                                                                                                                  |                         |                     |                     |  |
| Installation method                             | Outdoor stackable                                                                                                                                                               |                         |                     |                     |  |
| Noise level                                     | < 65 dB                                                                                                                                                                         |                         |                     |                     |  |
| Certificates                                    | IEC/EN 62619, IEC 63056, IEC/EN 62477, EN 61000, IEC62040, UN38.3                                                                                                               |                         |                     |                     |  |
|                                                 |                                                                                             |                         |                     |                     |  |
| Number of packs                                 | 4                                                                                                                                                                               | 5                       | 6                   | 7                   |  |
| Total capacity                                  | 48.24 kWh                                                                                                                                                                       | 60.3 kWh                | 72.36 kWh           | 84.42 kWh           |  |
| Dimensions (W × H × D) (with base\CB\Top cover) | 648 × 1730 × 415 mm                                                                                                                                                             | 648 × 2017 × 415 mm     | 648 × 2304 × 415 mm | 648 × 2591 × 415 mm |  |
| Total weight                                    | 468 kg                                                                                                                                                                          | 568 kg                  | 668 kg              | 768 kg              |  |

① This is provided by the battery cell manufacturer. Defined with standard test condition: the battery is within 70%SOH, charge and discharge at a constant current (0.2C) and an ambient temperature at 25°C±2°C.