

# Off-Grid Solar Inverter GP-SX SERIES

10 KVA ~ 120 KVA (3:3) (with isolated transformer)  
PF = 0.9



This Off-Grid solar system is available in 10KVA ~ 120KVA models with DSP digital control technology, it is combined with pulse-width modulation (SVPWM), disturbance MPPT control and multi-level control technology to enable the system to track the maximum power of solar panels fast. Its secure power supply feature provides good quality power with regulated voltage and frequency to the loads, and it is featured with energy storage and staggering power consumption as well. It is an ideal inverter for medium-sized or large-scale residential, commercial and industrial PV applications which are off the grid, such as village, farm, factory, office building and islands etc.

## Features

- High-speed DSP digital control
- Full-bridge inverter control technology, providing secure power supply in the event of three phase 100% unbalanced loads
- Multi-string PV connected
- Inbuilt AC rectifier and MPPT control modules, configured battery parameters by operating interface, self-regulation for charging voltage and current
- Hot-swap MPPT modules for easy maintenance and power expansion
- Auto access MPP tracking states, be most probable to use PV energy in priority
- Intelligent AC and PV complementation power supply function to extend the battery life.
- Using multicore control technology and auto MPP trackers, auto-start AC rectifier enable PV and AC source to supply power to the loads at the same time in the event of insufficient PV, which reduces battery discharge times and extend the battery life
- Intelligent staggering power consumption function
- Standard RS232, RS485 and optional SNMP communication port
- Multiple remote control: startup, shutdown, abnormal clearance, EPO, battery test and remote alarm port
- Staggering energy storage and power generation

## Specifications

| MODEL  | 10KVA  | 20KVA            | 30KVA           | 40KVA           | 60KVA             | 80KVA | 100KVA | 120KVA |
|--|--|------------------|-----------------|-----------------|-------------------|-------|--------|--------|
| Rated power                                  | 9 KW   | 18 KW            | 27 KW           | 36 KW           | 54 KW             | 72 KW | 90 KW  | 108 KW |
| Rated current                                | 15 A   | 30 A             | 45 A            | 60 A            | 91 A              | 120 A | 162 A  | 182 A  |
| Output power factor                          | 0.9  |                  |                 |                 |                   |       |        |        |
| Rated input voltage                          | 380 Vac ± 20%  |                  |                 |                 |                   |       |        |        |
| Rated output voltage                         | 380 Vac ± 1%   |                  |                 |                 |                   |       |        |        |
| Battery voltage                              | 360 Vdc  |                  |                 |                 |                   |       |        |        |
| Number of battery                            | 12 Vdc × 30 pcs / 2 Vdc × 180 pcs  |                  |                 |                 |                   |       |        |        |
| Operating mode                               | AC and PV complementation  |                  |                 |                 |                   |       |        |        |
| <b>PV INPUT</b>                              |  |                  |                 |                 |                   |       |        |        |
| Max. voltage (Voc)                           | 750 Vdc  |                  |                 |                 |                   |       |        |        |
| Optimum operating voltage (Vmp)              | 450 ~ 550 Vdc  |                  |                 |                 |                   |       |        |        |
| Max. conversion efficiency                   | ≥ 98%  |                  |                 |                 |                   |       |        |        |
| Floating charge voltage (25°C)               | 414 Vdc ± 1%   |                  |                 |                 |                   |       |        |        |
| Equalizing charge voltage (25°C)             | 428 Vdc ± 1%   |                  |                 |                 |                   |       |        |        |
| MPPT Max. current                            | 60 A   | 120 A            | 180 A           | 240 A           | 360 A             |       |        |        |
| Max. PV power                                | 25 KW  | 2 × 25 KW        | 3 × 25 KW       | 4 × 25 KW       | 6 × 25 KW         |       |        |        |
| Number of PV input                           | 1  | 2 + 1 (reserve)  | 3 + 1 (reserve) | 4 + 2 (reserve) | 6 + 2 (reserve)   |       |        |        |
| MPPT modules                                 | 1  | 2 + 1 (reserve)  | 3 + 1 (reserve) | 4 + 2 (reserve) | 6 + 2 (reserve)   |       |        |        |
| <b>AC RECTIFIER</b>                          |  |                  |                 |                 |                   |       |        |        |
| Input voltage range                          | 380 Vac ± 20% three-phase  |                  |                 |                 |                   |       |        |        |
| Rated frequency                              | 50 Hz / 60 Hz ± 5 Hz (settable)  |                  |                 |                 |                   |       |        |        |
| Power factor                                 | 0.8  |                  |                 |                 |                   |       |        |        |
| Floating charge voltage (25°C)               | 410 Vdc ± 1%   |                  |                 |                 |                   |       |        |        |
| Equalizing charge voltage (25°C)             | 415 Vdc ± 1%   |                  |                 |                 |                   |       |        |        |
| Max. charging current                        | 12 A   | 25 A             | 38 A            | 50 A            | 75 A              | 167 A | 208 A  | 250 A  |
| <b>INVERTER</b>                              |  |                  |                 |                 |                   |       |        |        |
| Inverter voltage                             | 380 Vac three-phase +N +G  |                  |                 |                 |                   |       |        |        |
| Phase voltage                                | 220 / 230 / 240 Vac (settable)   |                  |                 |                 |                   |       |        |        |
| Output voltage precision                     | ± 1%   |                  |                 |                 |                   |       |        |        |
| Transient voltage range                      | ± 5%   |                  |                 |                 |                   |       |        |        |
| Transient recovery time                      | 20 ms  |                  |                 |                 |                   |       |        |        |
| Rated frequency                              | 50 Hz / 60 Hz ± 1 Hz (settable)  |                  |                 |                 |                   |       |        |        |
| Frequency tracking range                     | 50 Hz / 60 Hz ± 3 Hz   |                  |                 |                 |                   |       |        |        |
| Peak factor                                  | 3 : 1  |                  |                 |                 |                   |       |        |        |
| Waveform                                     | Sinusoidal   |                  |                 |                 |                   |       |        |        |
| Waveform distortion                          | ≤ 3% (linear load)   |                  |                 |                 |                   |       |        |        |
| Voltage unbalance                            | ± 3% (100% unbalanced load)  |                  |                 |                 |                   |       |        |        |
| Overload                                     | ≥ 105% ~ 110% for 1 h; ≥ 110% ~ 125% for 10 mins; ≥ 125% ~ 150% for 1 min; ≥ 150% shut down in 10 s; ≥ 200% shut down immediately        |                  |                 |                 |                   |       |        |        |
| Short circuit                                | Current-limiting, shut down immediately until the user start up  |                  |                 |                 |                   |       |        |        |
| Max. efficiency                              | ≥ 90%  | ≥ 91%            | ≥ 92%           |                 |                   |       |        | ≥ 93%  |
| <b>BYPASS</b>                                |  |                  |                 |                 |                   |       |        |        |
| Rated voltage                                | 380 Vac three-phase + N+G  |                  |                 |                 |                   |       |        |        |
| Voltage range                                | ± 20%  |                  |                 |                 |                   |       |        |        |
| Rated frequency                              | 50 Hz / 60 Hz ± 5 Hz   |                  |                 |                 |                   |       |        |        |
| Max. current                                 | 19 A   | 38 A             | 57 A            | 76 A            | 114 A             | 152 A | 190 A  | 228 A  |
| <b>BATTERIES MANAGEMENT</b>                  |  |                  |                 |                 |                   |       |        |        |
| EOD voltage settings                         | 1.58 Vdc ~ 1.83 Vdc (settable), 1.75 Vdc (default)   |                  |                 |                 |                   |       |        |        |
| Staggering DOD (Depth of Discharge) settings | 1.85 Vdc ~ 2.1 Vdc (settable), 1.89 Vdc (default)  |                  |                 |                 |                   |       |        |        |
| Charging current settings                    | Factory default 0.15 C <sub>10</sub> ; 0.07 ~ 0.3 C <sub>10</sub> (settable)   |                  |                 |                 |                   |       |        |        |
| Battery management                           | Auto-transfer between equalizing charge and floating charge; Auto-temperature compensation of batteries                                  |                  |                 |                 |                   |       |        |        |
| <b>TRANSFER TIME</b>                         |  |                  |                 |                 |                   |       |        |        |
| Inverter - Bypass                            | 0 ms   |                  |                 |                 |                   |       |        |        |
| Bypass - Inverter                            | 0 ms   |                  |                 |                 |                   |       |        |        |
| <b>COMMUNICATIONS</b>                        |  |                  |                 |                 |                   |       |        |        |
| Remote control                               | Inverter startup, shutdown, abnormal clearance, EPO, battery self-test   |                  |                 |                 |                   |       |        |        |
| Communication interface                      | RS232 / RS485 ; SNMP / WiFi / Bluetooth (optional)   |                  |                 |                 |                   |       |        |        |
| Dry contacts output                          | Bypass input abnormal, rectifier input abnormal, system fault, system alarm, low battery, output overload, fan fault, generator ON / OFF |                  |                 |                 |                   |       |        |        |
| <b>OTHERS</b>                                |  |                  |                 |                 |                   |       |        |        |
| Operating temperature                        | 0°C ~ 40°C   |                  |                 |                 |                   |       |        |        |
| Max. relative humidity                       | 90% (non-condensing)   |                  |                 |                 |                   |       |        |        |
| Max. altitude                                | 1000 m at rated power (derating 1% for each additional 100 m); Max. 4000 m   |                  |                 |                 |                   |       |        |        |
| Noise level at 1 m                           | ≤ 65 dB (varies with loads and temperature)  |                  |                 |                 |                   |       |        |        |
| IP rating                                    | IP20   |                  |                 |                 |                   |       |        |        |
| Dimensions (W × D × H) (mm)                  | 450 × 840 × 1100   | 600 × 700 × 1750 |                 |                 | 960 × 800 × 1700  |       |        |        |
| Packaged dimensions (W × D × H) (mm)         | 530 × 920 × 1140   | 690 × 790 × 1850 |                 |                 | 1040 × 890 × 1750 |       |        |        |
| Weight (kg)                                  | 230  | 245              | 380             | 430             | 515               | 760   | 800    | 860    |

● All specifications subject to change without notice.