

# Three Phase Hybrid Inverter

SUN-3/4/5/6/8/10/12K-SG05LP3-EU-SM2



## Safe

- 48V low voltage battery, transformer isolation design



## Intelligent

- 6 time periods for battery charging/discharging



## Flexible

- AC couple to retrofit existing solar system
- Max. 10 pcs parallel for on-grid and off-grid operation; support multiple batteries parallel



## Reliable

- Max. charging/discharging current of 240A
- Support storing energy from diesel generator
- 100% unbalanced output, max. output up to 50% rated power for each phase

# Technical Data

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| Model                                              | SUN-3K-SG05<br>LP3-EU-SM2                                                                                                                                                                                                                                                                                                   | SUN-4K-SG05<br>LP3-EU-SM2 | SUN-5K-SG05<br>LP3-EU-SM2 | SUN-6K-SG05<br>LP3-EU-SM2 | SUN-8K-SG05<br>LP3-EU-SM2 | SUN-10K-SG05<br>LP3-EU-SM2 | SUN-12K-SG05<br>LP3-EU-SM2 |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|
| Battery Input Data                                 |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Battery Type                                       | Lead-acid or Lithium-ion                                                                                                                                                                                                                                                                                                    |                           |                           |                           |                           |                            |                            |
| Battery Voltage Range (V)                          | 40-60                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           |                            |                            |
| Max. Charging/Discharging Current (A)              | 70                                                                                                                                                                                                                                                                                                                          | 95                        | 120                       | 135                       | 190                       | 210                        | 240                        |
| Charging Strategy for Li-ion Battery               | Self-adaption to BMS                                                                                                                                                                                                                                                                                                        |                           |                           |                           |                           |                            |                            |
| Number of Battery Input                            | 1                                                                                                                                                                                                                                                                                                                           |                           |                           |                           |                           |                            |                            |
| PV String Input Data                               |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Max. PV access power (W)                           | 6000                                                                                                                                                                                                                                                                                                                        | 8000                      | 10000                     | 12000                     | 16000                     | 20000                      | 24000                      |
| Max. PV Input Power (W)                            | 4800                                                                                                                                                                                                                                                                                                                        | 6400                      | 8000                      | 9600                      | 12800                     | 16000                      | 19200                      |
| Max. PV Input Voltage (V)                          | 800                                                                                                                                                                                                                                                                                                                         |                           |                           |                           |                           |                            |                            |
| Start-up Voltage (V)                               | 160                                                                                                                                                                                                                                                                                                                         |                           |                           |                           |                           |                            |                            |
| MPPT Voltage Range (V)                             | 200-650                                                                                                                                                                                                                                                                                                                     |                           |                           |                           |                           |                            |                            |
| Rated PV Input Voltage (V)                         | 550                                                                                                                                                                                                                                                                                                                         |                           |                           |                           |                           |                            |                            |
| Max. Operating PV Input Current (A)                | 20+20                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           | 26+26                      |                            |
| Max. Input Short-Circuit Current (A)               | 30+30                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           | 39+39                      |                            |
| No. of MPP Trackers/<br>No. of Strings MPP Tracker | 2/1+1                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           | 2/2+2                      |                            |
| AC Input/Output Data                               |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Rated AC Input/Output Active Power (W)             | 3000                                                                                                                                                                                                                                                                                                                        | 4000                      | 5000                      | 6000                      | 8000                      | 10000                      | 12000                      |
| Max. AC Input/Output Apparent Power (VA)           | 3300                                                                                                                                                                                                                                                                                                                        | 4400                      | 5500                      | 6600                      | 8800                      | 11000                      | 13200                      |
| Rated AC Input/Output Current (A)                  | 4.6/4.4                                                                                                                                                                                                                                                                                                                     | 6.1/5.8                   | 7.6/7.3                   | 9.1/8.7                   | 12.2/11.6                 | 15.2/14.5                  | 18.2/17.4                  |
| Max. AC Input/Output Current (A)                   | 5/4.8                                                                                                                                                                                                                                                                                                                       | 6.7/6.4                   | 8.4/8                     | 10/9.6                    | 13.4/12.8                 | 16.7/16                    | 20/19.2                    |
| Max. Continuous AC Passthrough (grid to load) (A)  | 45                                                                                                                                                                                                                                                                                                                          |                           |                           |                           |                           |                            |                            |
| Peak Power (off-grid) (W)                          | 2 times of rated power, 10s                                                                                                                                                                                                                                                                                                 |                           |                           |                           |                           |                            |                            |
| Power Factor Adjustment Range                      | 0.8 leading to 0.8 lagging                                                                                                                                                                                                                                                                                                  |                           |                           |                           |                           |                            |                            |
| Rated input/output voltage                         | 220/380V,230/400V 0.85Un-1.1Un 3L+N+PE                                                                                                                                                                                                                                                                                      |                           |                           |                           |                           |                            |                            |
| Rated Input/Output Grid Frequency/Range(Hz)        | 50/45-55, 60/55-65                                                                                                                                                                                                                                                                                                          |                           |                           |                           |                           |                            |                            |
| Total Current Harmonic Distortion THDi             | <3% (of nominal power)                                                                                                                                                                                                                                                                                                      |                           |                           |                           |                           |                            |                            |
| DC Injection Current                               | <0.5% In                                                                                                                                                                                                                                                                                                                    |                           |                           |                           |                           |                            |                            |
| Efficiency                                         |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Max. Efficiency                                    | 97.6%                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           |                            |                            |
| Euro Efficiency                                    | 97.0%                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           |                            |                            |
| MPPT Efficiency                                    | >99%                                                                                                                                                                                                                                                                                                                        |                           |                           |                           |                           |                            |                            |
| Equipment Protection                               |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Integrated                                         | DC Reverse Polarity Protection, AC Output Overcurrent Protection, Thermal Protection, AC Output Overvoltage Protection, AC Output Short Circuit Protection, DC Component Monitoring, Arc Fault Circuit Interrupter (AFCI), Anti-islanding Protection, DC Switch, Insulation Impedance Detection, Residual Current Detection |                           |                           |                           |                           |                            |                            |
| Surge Protection Level                             | TYPE II(DC), TYPE II(AC)                                                                                                                                                                                                                                                                                                    |                           |                           |                           |                           |                            |                            |
| Interface                                          |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| LCD/LED Display                                    | LCD                                                                                                                                                                                                                                                                                                                         |                           |                           |                           |                           |                            |                            |
| Communication Interface                            | WIFI,RS485,CAN                                                                                                                                                                                                                                                                                                              |                           |                           |                           |                           |                            |                            |
| General Data                                       |                                                                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Operating Temperature Range (°C)                   | -40 to +60°C, >45°C Derating                                                                                                                                                                                                                                                                                                |                           |                           |                           |                           |                            |                            |
| Permissible Ambient Humidity                       | 0-100%                                                                                                                                                                                                                                                                                                                      |                           |                           |                           |                           |                            |                            |
| Permissible Altitude                               | 3000m                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           |                            |                            |
| Noise (dB)                                         | ≤55                                                                                                                                                                                                                                                                                                                         |                           |                           |                           |                           |                            |                            |
| Ingress Protection(IP) Rating                      | IP 65                                                                                                                                                                                                                                                                                                                       |                           |                           |                           |                           |                            |                            |
| Inverter Topology                                  | Non-Isolated (solar), Isolated (battery)                                                                                                                                                                                                                                                                                    |                           |                           |                           |                           |                            |                            |
| Over Voltage Category                              | OVC II(DC), OVC III(AC)                                                                                                                                                                                                                                                                                                     |                           |                           |                           |                           |                            |                            |
| Cabinet Size (WxHxD mm)                            | 386×660×250 (Excluding Connectors and Brackets)                                                                                                                                                                                                                                                                             |                           |                           |                           |                           |                            |                            |
| Weight (kg)                                        | 35.2                                                                                                                                                                                                                                                                                                                        |                           |                           |                           |                           |                            |                            |
| Type of Cooling                                    | Intelligent Air Cooling                                                                                                                                                                                                                                                                                                     |                           |                           |                           |                           |                            |                            |
| Warranty                                           | 5 Years/10 Years<br>the Warranty Period Depends the Final Installation Site of Inverter, More Info Please Refer to Warranty Policy                                                                                                                                                                                          |                           |                           |                           |                           |                            |                            |
| Grid Regulation                                    | IEC 61727, IEC 62116, CEI 0-21, EN 50549, NRS 097, RD 140, UNE 217002, OVE-Richtlinie R25, G99, VDE-AR-N 4105                                                                                                                                                                                                               |                           |                           |                           |                           |                            |                            |
| Safety / EMC Standard                              | IEC/EN 61000-6-1/2/3/4, IEC/EN 62109-1, IEC/EN 62109-2                                                                                                                                                                                                                                                                      |                           |                           |                           |                           |                            |                            |