

# SPH 4000~10000TL3 BH-UP

- 100% three-phase imbalance output
- Smart phase-level power export limitation
- Wide battery voltage 100-550V
- UPS function, 10ms transition
- Scalable system configuration
- VPP interface ready
- DC/AC type II SPD
- 1.5 DC/AC Ratio



**GROWATT**

P O W E R  
- I N G O  
T O M O -  
R R O W O

| Datasheet                                                                                                                                                   | SPH 4000TL3 BH-UP               | SPH 5000TL3 BH-UP | SPH 6000TL3 BH-UP | SPH 7000TL3 BH-UP | SPH 8000TL3 BH-UP | SPH 10000TL3 BH-UP |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| Input data(PV)                                                                                                                                              |                                 |                   |                   |                   |                   |                    |
| Max. recommended PV power (for module STC)                                                                                                                  | 6000W                           | 7500W             | 9000W             | 10500W            | 12000W            | 15000W             |
| Max. DC voltage                                                                                                                                             | 1000                            |                   |                   |                   |                   |                    |
| Start voltage                                                                                                                                               | 120V                            |                   |                   |                   |                   |                    |
| MPP voltage range                                                                                                                                           | 120V-1000V/600V                 |                   |                   |                   |                   |                    |
| No. of MPP trackers                                                                                                                                         | 2                               |                   |                   |                   |                   |                    |
| No. of PV strings per MPP tracker                                                                                                                           | 1                               |                   |                   |                   |                   |                    |
| Max. input current per MPP tracker                                                                                                                          | 13.5A                           |                   |                   |                   |                   |                    |
| Max. short-circuit current per MPP tracker                                                                                                                  | 16.9A                           |                   |                   |                   |                   |                    |
| Output data(AC)                                                                                                                                             |                                 |                   |                   |                   |                   |                    |
| AC nominal power                                                                                                                                            | 4000W                           | 5000W             | 6000W             | 7000W             | 8000W             | 10000W             |
| Max. AC apparent power                                                                                                                                      | 4000VA                          | 5000VA            | 6000VA            | 7000VA            | 8000VA            | 10000VA            |
| Nominal AC voltage (range*)                                                                                                                                 | 230V/400V (310~476V)            |                   |                   |                   |                   |                    |
| AC grid frequency (range)                                                                                                                                   | 50Hz/60Hz (45Hz-55Hz/55Hz-65Hz) |                   |                   |                   |                   |                    |
| Max. output current                                                                                                                                         | 6.1A                            | 7.6A              | 9.1A              | 10.6A             | 12.1A             | 15.2A              |
| Adjustable power factor                                                                                                                                     | 0.8leading...0.8lagging         |                   |                   |                   |                   |                    |
| THDi                                                                                                                                                        | <3%                             |                   |                   |                   |                   |                    |
| AC grid connection type                                                                                                                                     | 3W+N+PE                         |                   |                   |                   |                   |                    |
| Battery data (DC)                                                                                                                                           |                                 |                   |                   |                   |                   |                    |
| Battery voltage range                                                                                                                                       | 100~550V                        |                   |                   |                   |                   |                    |
| Max charging and discharging current                                                                                                                        | 25A                             |                   |                   |                   |                   |                    |
| Continuous charging and discharging power                                                                                                                   | 4000W                           | 5000W             | 6000W             | 7000W             | 8000W             | 10000W             |
| Type of battery                                                                                                                                             | lithium/lead-acid               |                   |                   |                   |                   |                    |
| Backup power(AC)                                                                                                                                            |                                 |                   |                   |                   |                   |                    |
| Max. AC output power                                                                                                                                        | 4000W                           | 5000W             | 6000W             | 7000W             | 8000W             | 10000W             |
| Max. AC apparent power                                                                                                                                      | 4000VA                          | 5000VA            | 6000VA            | 7000VA            | 8000VA            | 10000VA            |
| Max. output current                                                                                                                                         | 6.1A                            | 7.6A              | 9.1A              | 10.6A             | 12.1A             | 15.2A              |
| Nominal AC output voltage                                                                                                                                   | 230V/400V                       |                   |                   |                   |                   |                    |
| Nominal AC output frequency                                                                                                                                 | 50/60HZ                         |                   |                   |                   |                   |                    |
| THDv                                                                                                                                                        | <3%                             |                   |                   |                   |                   |                    |
| Switch time                                                                                                                                                 | <10ms                           |                   |                   |                   |                   |                    |
| Efficiency                                                                                                                                                  |                                 |                   |                   |                   |                   |                    |
| MAX. efficiency                                                                                                                                             | 97.6%                           | 97.8%             | 98.0%             | 98.2%             | 98.2%             | 98.2%              |
| European efficiency                                                                                                                                         | 97.0%                           | 97.2%             | 97.3%             | 97.4%             | 97.4%             | 97.5%              |
| Euro battery discharge efficiency                                                                                                                           | 97.4%                           |                   |                   |                   |                   |                    |
| MPPT efficiency                                                                                                                                             | 99.9%                           |                   |                   |                   |                   |                    |
| Protection devices                                                                                                                                          |                                 |                   |                   |                   |                   |                    |
| DC switch                                                                                                                                                   | Yes                             |                   |                   |                   |                   |                    |
| DC reverse polarity protection                                                                                                                              | Yes                             |                   |                   |                   |                   |                    |
| AC/DC surge protection                                                                                                                                      | Type II                         |                   |                   |                   |                   |                    |
| Battery reverse protection                                                                                                                                  | Yes                             |                   |                   |                   |                   |                    |
| AC short-circuit protection                                                                                                                                 | Yes                             |                   |                   |                   |                   |                    |
| Ground fault monitoring                                                                                                                                     | Yes                             |                   |                   |                   |                   |                    |
| Grid monitoring                                                                                                                                             | Yes                             |                   |                   |                   |                   |                    |
| Anti-islanding protection                                                                                                                                   | Yes                             |                   |                   |                   |                   |                    |
| Residual-current monitoring unit                                                                                                                            | Yes                             |                   |                   |                   |                   |                    |
| Insulation resistance monitoring                                                                                                                            | Yes                             |                   |                   |                   |                   |                    |
| General data                                                                                                                                                |                                 |                   |                   |                   |                   |                    |
| Dimensions (W / H / D)                                                                                                                                      | 505/453/198mm                   |                   |                   |                   |                   |                    |
| Weight                                                                                                                                                      | 30kg                            |                   |                   |                   |                   |                    |
| Operating temperature range                                                                                                                                 | -25 °C ... +60 °C               |                   |                   |                   |                   |                    |
| Nighttime power consumption                                                                                                                                 | <13W                            |                   |                   |                   |                   |                    |
| Topology                                                                                                                                                    | Transformerless                 |                   |                   |                   |                   |                    |
| Cooling                                                                                                                                                     | Natural                         |                   |                   |                   |                   |                    |
| Protection degree                                                                                                                                           | IP65                            |                   |                   |                   |                   |                    |
| Relative humidity                                                                                                                                           | 0~100%                          |                   |                   |                   |                   |                    |
| Altitude                                                                                                                                                    | 3000m                           |                   |                   |                   |                   |                    |
| DC connection                                                                                                                                               | H4 / MC4 (Optional )            |                   |                   |                   |                   |                    |
| AC connection                                                                                                                                               | Connector                       |                   |                   |                   |                   |                    |
| Display                                                                                                                                                     | LCD+LED                         |                   |                   |                   |                   |                    |
| Interfaces: RS485/CAN/USB                                                                                                                                   | Yes                             |                   |                   |                   |                   |                    |
| Monitor : RF/WIFI/GPRS                                                                                                                                      | Optional                        |                   |                   |                   |                   |                    |
| Warranty: 5 years / 10 years                                                                                                                                | Yes / Optional                  |                   |                   |                   |                   |                    |
| CE, IEC62109, IEC 62040, VDE-AR-N 4105, VDE 0126, UTE C 15-712, C10/C11 , EN50549, CEI 0-21 , CEI 0-16, IEC62116, IEC61727, AS/NZS 4777 , G98, TOR Erzeuger |                                 |                   |                   |                   |                   |                    |

\* The AC Voltage Range may vary depending on specific country grid standard.