

Growatt SPH3000 / SPH3600 / SPH4000 /  
SPH4600 / SPH5000 / SPH6000



With a charge and discharge power of 3KW, the Growatt SPH series is perfect suited to coping with the electricity demand of a private household. As providing the backup power, the household can enjoy an optimum electricity supply even during power outages by adding its accessory (automatic transfer switch). With the Growatt hybrid inverter allowing for both DC- and AC-coupling, the SPH series system is an ideal solution for new installations as well as storage upgrades for existing PV systems.

## Leading - edge Technology

### User-friendly

- ▶ Support Smartphone to check the inverter status via local WIFI network
- ▶ Standard USB port for charging cell phone and firmware update

### Reliable

- ▶ IP65 protection degree for indoor and outdoor use
- ▶ Automatically supplying power to backed-up loads in the event of grid outages with ATS device

### Flexible

- ▶ Suitable for new and existing solar systems
- ▶ Compatible with both lithium-ion and lead-acid batteries
- ▶ Charging and discharging time period is programmable

### Enhanced safety

- ▶ Comprehensive protection: DC reverses polarity protection for PV and battery, etc
- ▶ Flexible charge and discharge mechanism, reducing impact on the grid

Datasheet	Growatt SPH3000	Growatt SPH3600	Growatt SPH4000	Growatt SPH4600	Growatt SPH5000	Growatt SPH6000
<b>DC input data</b>						
Max. recommended PV power	6600W	6600W	6600W	8000W	8000W	8000W
Start voltage	150V	150V	150V	150V	150V	150V
PV voltage range	120V-550V	120V-550V	120V-550V	120V-550V	120V-550V	120V-550V
MPP voltage range/nominal voltage	150V-550V /360V	150V-550V /360V	150V-550V /360V	150V-550V /360V	150V-550V /360V	150V-550V /360V
Max. input current of tracker A/B	12A/12A	12A/12A	12A/12A	12A/12A	12A/12A	12A/12A
Number of MPP trackers / strings per MPP tracker	2/1	2/1	2/1	2/1	2/1	2/1
<b>AC Output</b>						
Rated AC output power	3000W	3680W	4000W	4600W	4999W	6000W
Max. AC apparent power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Max. output current	16A	16A	22A	22A	22A	27A
Nominal AC output voltage; range	230V ; 180Vac-280Vac	230V ; 180Vac-280Vac	230V ; 180Vac-280Vac	230V ; 180Vac-280Vac	230V ; 180Vac-280Vac	230V ; 180Vac-280Vac
Nominal grid frequency; range	50,50±5Hz	50,50±5Hz	50,50±5Hz	50,50±5Hz	50,50±5Hz	50,50±5Hz
Power factor at rated power	1	1	1	1	1	1
Displacement power factor	0.8leading...0.8lagging	0.8leading...0.8lagging	0.8leading...0.8lagging	0.8leading...0.8lagging	0.8leading...0.8lagging	0.8leading...0.8lagging
THDI	<3%	<3%	<3%	<3%	<3%	<3%
<b>AC output power(Backup)</b>						
Max. output power	3000W	3000W	3000W	3000W	3000W	3000W
Rated AC output voltage	230Vac	230Vac	230Vac	230Vac	230Vac	230Vac
Rated AC output frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Automatic switchover time	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S
<b>Battery data</b>						
Battery voltage range	42~59V	42~59V	42~59V	42~59V	42~59V	42~59V
Max. charging voltage	58V	58V	58V	58V	58V	58V
Max charging and discharging current	66A	66A	66A	66A	66A	66A
Max charging and discharging power	3000W	3000W	3000W	3000W	3000W	3000W
Battery type	lithium ion battery/ Lead-acid battery	lithium ion battery/ Lead-acid battery	lithium ion battery/ Lead-acid battery	lithium ion battery/ Lead-acid battery	lithium ion battery/ Lead-acid battery	Lithium-ion /Lead-acid
Deep of discharging	80%DOD/50%DOD	80%DOD/50%DOD	80%DOD/50%DOD	80%DOD/50%DOD	80%DOD/50%DOD	80%DOD/50%DOD
Capacity of battery	3~12kWh	3~12kWh	3~12kWh	3~12kWh	3~12kWh	3~12kWh
<b>Efficiency</b>						
Max. efficiency	97.1%	97.2%	97.2%	97.3%	97.3%	97.5%
Euro European efficiency	96.8%	96.9%	96.9%	97.0%	97.0%	97.1%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%
<b>Protection devices</b>						
DC reverse polarity protection	yes	yes	yes	yes	yes	yes
Battery reverse protection	yes	yes	yes	yes	yes	yes
Output over current protection	yes	yes	yes	yes	yes	yes
Output over voltage protection	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes
Integrated all - pole sensitive leakage	yes	yes	yes	yes	yes	yes
<b>General Data</b>						
Dimensions (W / H / D) mm	547*516*170	547*516*170	547*516*170	547*516*170	547*516*170	547*516*170
Weight	26KG	26KG	26KG	26KG	26KG	26KG
Operating temperature range	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C	-25°C ... +60°C
Noise emission (typical)	≤ 25 dB(A)	≤ 25 dB(A)	≤ 25 dB(A)	≤ 25 dB(A)	≤ 25 dB(A)	≤ 25 dB(A)
Altitude	2000m	2000m	2000m	2000m	2000m	2000m
Self-Consumption	< 4 W	< 4 W	< 4 W	< 4 W	< 4 W	< 4 W
Inverter Topology	transformerless	transformerless	transformerless	transformerless	transformerless	transformerless
Cooling concept	Natural	Natural	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP65	IP65	IP65	IP65	IP65	IP65
Relative humidity	100%	100%	100%	100%	100%	100%
DC connection	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)
Interface:RS485/USB/CAN/WIFI/GPRS	yes /yes /opt/opt/opt	yes /yes /opt/opt/opt	yes /yes /opt/opt/opt	yes /yes /opt/opt/opt	yes /yes /opt/opt/opt	yes /yes /opt/opt/opt
Display	LCD	LCD	LCD	LCD	LCD	LCD
Warranty: 5 years / 10 years	yes /opt	yes /opt	yes /opt	yes /opt	yes /opt	yes /opt
<b>Certificates and Approvals</b>						
CE, IEC62109, G83/G59, VDE0126-1-1, AS4777, AS/NZS 3100, CEI 0-21, VDE-AR-N4105						