



Growatt SPH series is perfectly suited to coping with the electricity demand of a private household, as a good residential storage solution, Growatt SPH series can connect PV, battery and grid to one inverter, which is the best choice for new storage system.

## Leading - edge Technology

### User-friendly

- ▶ Local graphic LCD and four buttons, easier for LCD operation
- ▶ Compact design for easy installation

### Reliable

- ▶ IP65 protection degree, better lifetime guarantee
- ▶ Natural cooling, no additional fans
- ▶ Integrated backed-up function, transfer time within 0.5s

### Flexible

- ▶ Storage ready solution, you can add battery later
- ▶ Dynamic feed-in control
- ▶ Charging and discharging time and power schedulable

### Enhanced safety

- ▶ Online smart service along with system operation
- ▶ Smart battery management ensure battery safety
- ▶ Comprehensive protections for whole system

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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
Max. PV voltage	550V	550V	550V	550V	550V	550V
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	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
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 /Lead-acid	lithium /Lead-acid	lithium /Lead-acid	lithium /Lead-acid	lithium /Lead-acid	Lithium /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	97.5%	97.5%	97.5%	97.6%	97.6%	97.7%
Euro European efficiency	97.0%	97.0%	97.0%	97.1%	97.1%	97.1%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%	99.5%	99.5%
<b>Protection devices</b>						
DC switch for each MPPT	yes	yes	yes	yes	yes	yes
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
Grid 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	27KG	27KG	27KG	27KG	27KG	27KG
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	< 3 W	< 3 W	< 3 W	< 3 W	< 3 W	< 3 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%
<b>Features</b>						
DC connection	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)	MC4/H4(opt)
Interface:RS232/USB/RF/Wi-Fi/LAN	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

**Certificates and Approvals**

CE, IEC62109, G83/G59, VDE0126-1-1, AS4777, AS/NZS 3100, CEI 0-21, VDE-AR-N4105, VFR 2014, En50438, IEC 61727, IEC 62116