

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

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twitter&facebook: Growatt New Energy

GR-CA-017-01



Residential Energy Storage Solutions

Guarantee your 24/7 energy with the best products and services



About Growatt



Fast growing new energy enterprise

► Leading brand, focus on string inverter



0.75-253kW
capacity



1,700,000+
shipped totally



17GW+
total shipment capacity



business covered
100 countries and regions



11798870.9T
CO₂ emission reduction

► Continuous investment in innovation



1200 employees
20% R&D engineers



8% revenue
in R&D investment

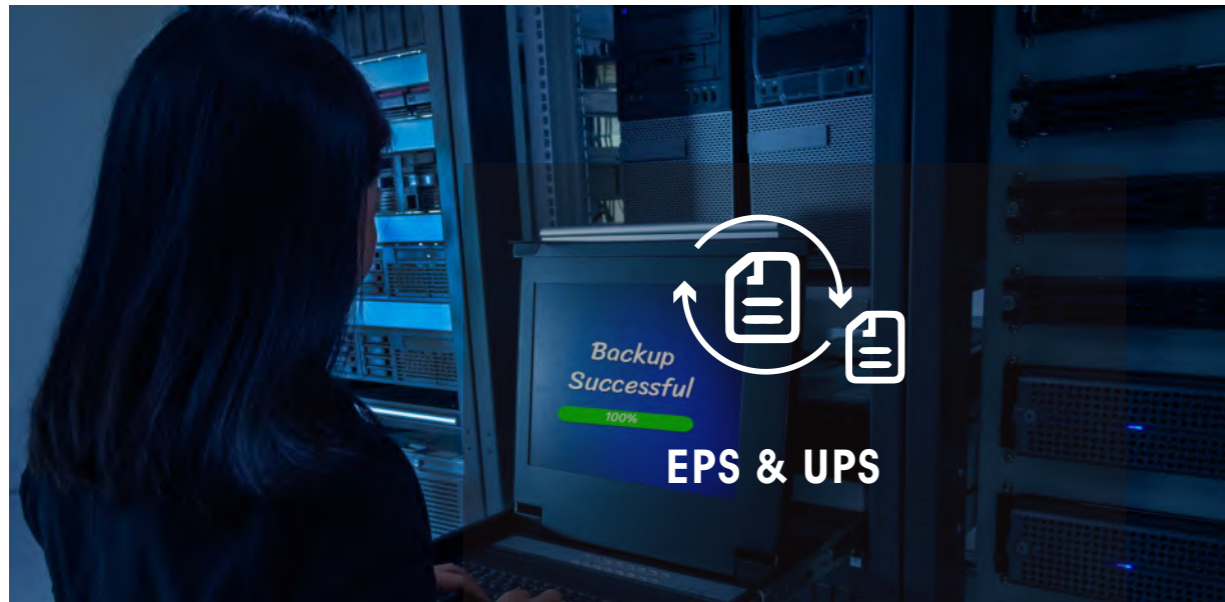


70+ patents
and copyrights

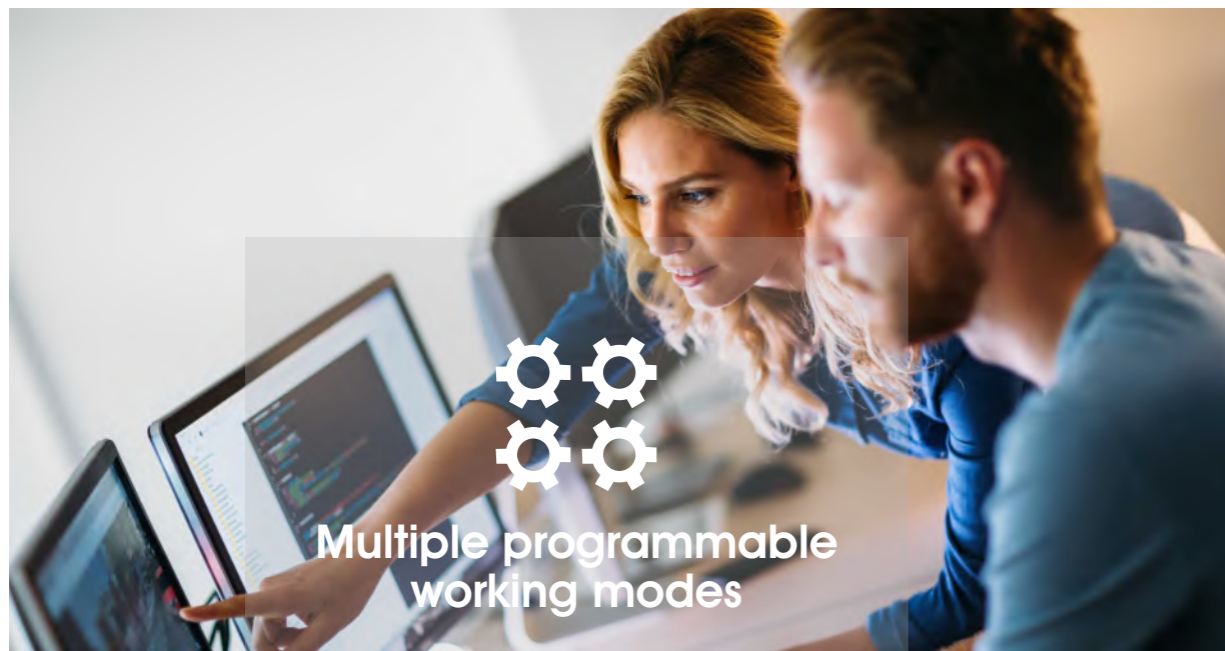
► Offices and service centers globally



Strength of Growatt storage solutions



When grid is blackout, inverter can work as back-up: for SPH3000~6000TL BL-UP series, Growatt provide UPS solution which help you switch back-up power without interruption. And for the rest of Growatt storage products, the external ATS, AC relay or manual switch box would be provided by Growatt for the EPS function to transfer on-grid to off-grid backup.



Variety of models and parameters for you to choose and adjust, easily cope with the ladder price, peak hours and other special circumstances, you can flexible decide how to realize self-sufficiency and increase system self-consumption.



Real-time updated battery data, even battery cycle counts and battery information, let you know more about your battery, protect battery from over discharging in insufficient sunshine areas in winter.



Detailed grid and PV data (including power generation and consumption graphs) and real-time system diagrams, let you know your home's energy structure anytime and anywhere, also with these data, you can efficiently program your system to realize maximum self-consumption.



DIY your own
ideal system based
on our diverse
range of products



Modular or integrated battery? WIFI, RF or GPRS monitoring method? Electricity meter or CT?
Choose the system configuration that best suits your environment, everything depend on yourself.

GroHome — PV home of the future

GroHome is a smart home system that integrates a solar PV energy system with energy storage, EV chargers, water heaters, and internet-of-things (IoT) devices – such as a smart plug, thermostats, and air-conditioning units. Now this powerful system can not only enable you to enjoy a smart and homey lifestyle but also could increase a household's rate of solar self-consumption to achieve to 100% green energy powering your home

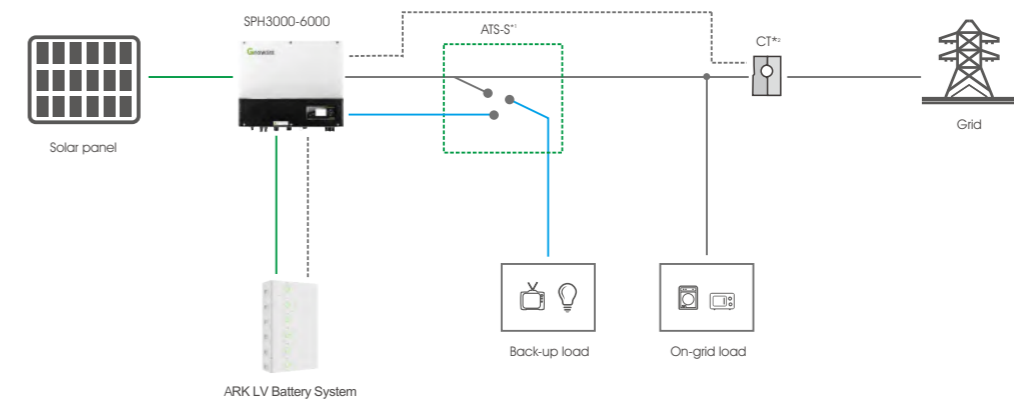


Whether you need a single-phase system or a three-phase system, whether you need a new system or update an old system, we can provide you the right solution. Of course, in order to deal with some special needs, such as use single phase inverter in three-phase system, expand the capacity of the photovoltaic system by adding energy storage or not using the PV only to use the grid to store energy, we can also provide the best solution.

Hybrid Solutions

■ DC Line ■ AC Line ■ Back-up Line ■ Communication Line

1. Single phase hybrid inverter basic application



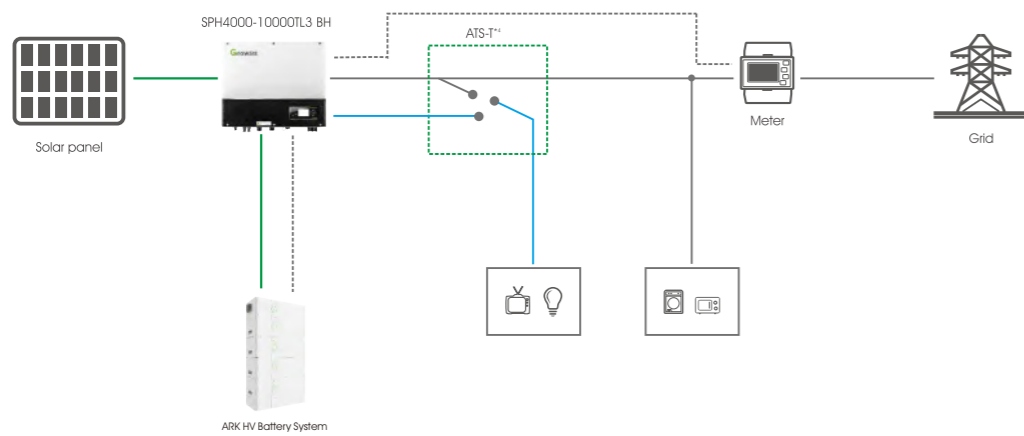
* ATS-S is optional to extend the back-up function

2. Single phase battery ready inverter basic application



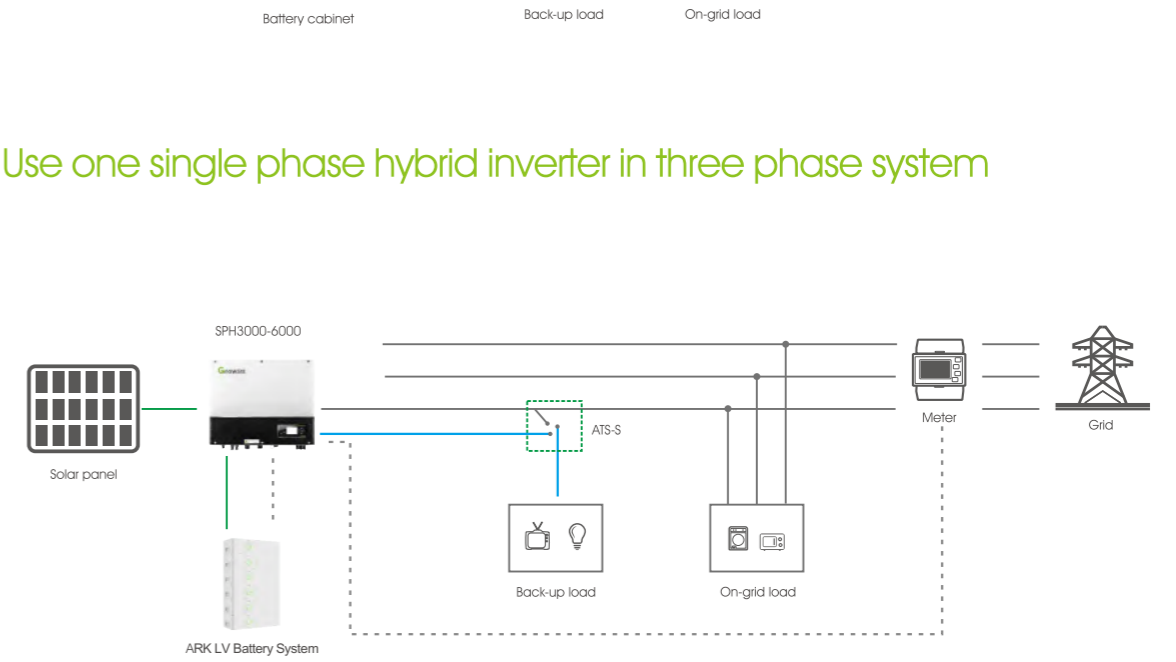
* ATS is optional to extend the back-up function.

3. Three phase hybrid inverter basic application



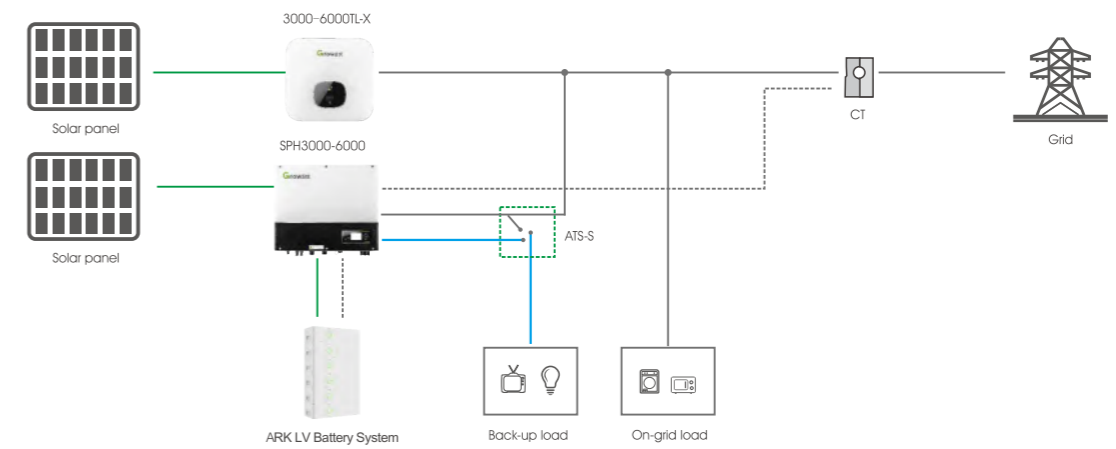
*ATS-T is optional to extend the back-up function

4. Use one single phase hybrid inverter in three phase system



*ATS-S is optional to extend the back-up function

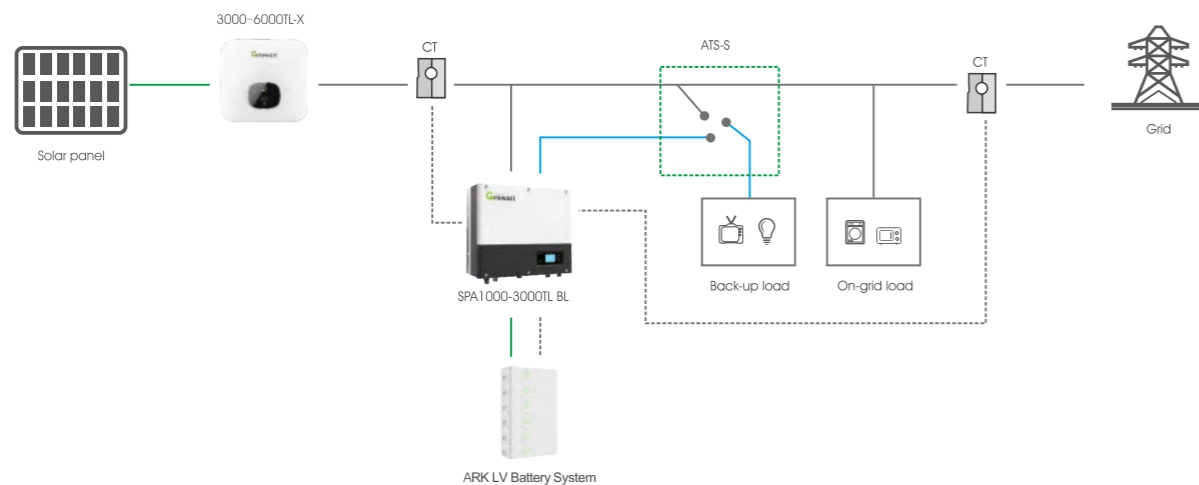
5. Use hybrid inverter to extend the capacity of existing inverter system



*ATS-S is optional to extend the back-up function

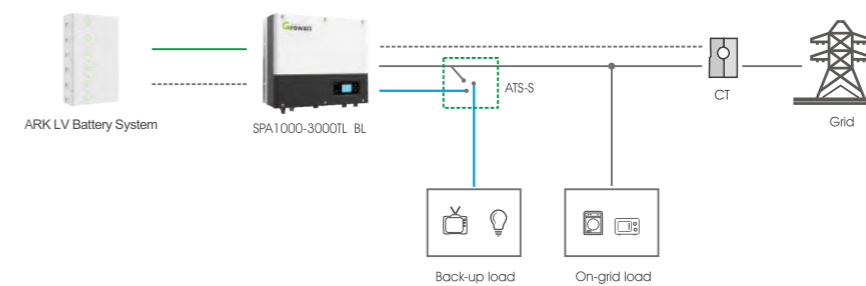
AC-coupled solutions

1. Single phase AC-coupled inverter basic application



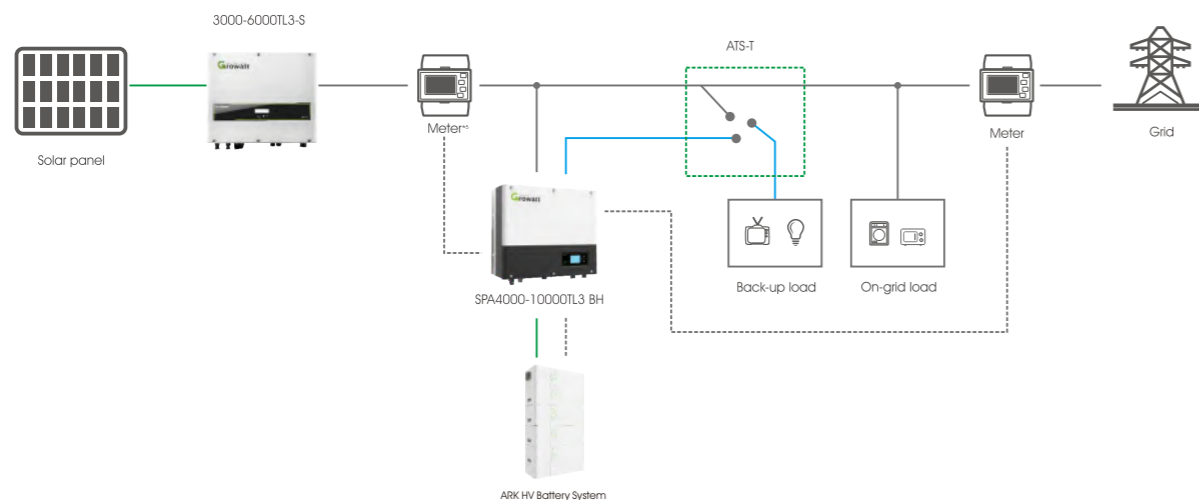
*ATS is optional to extend the back-up function

3. Use single phase AC-coupled inverter without PV



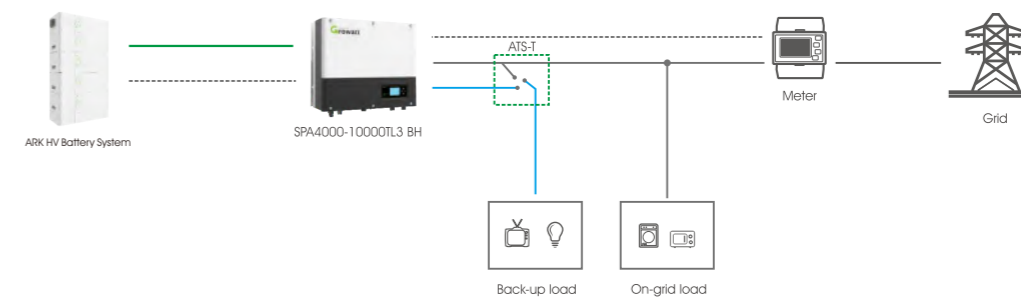
*ATS-S is optional to extend the back-up function

2. Three phase AC-coupled inverter basic application



*ATS-T is optional to extend the back-up function

4. Use three phase AC-coupled inverter without PV



*ATS-T is optional to extend the back-up function

SPH 3000~6000



Single phase all-in-one hybrid inverter ideal for home systems. stunning IP65 protection level, more durable and flexible for installation; multiple programmable working modes, decide by yourself how to realize self-sufficiency and make the max out of your system; the EPS output can even provide backup supply during grid absence; comprehensive accessories including battery, meter and datalogger optional for different application scenarios.

- Dual MPP trackers
- IP65 & Natural cooling
- Programmable working modes
- Supports Export Control
- Online Smart Service

Datasheet	SPH3000	SPH3600	SPH4000	SPH4600	SPH5000	SPH6000
DC input data						
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
MPPT 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
AC Output						
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	230V	230V	230V	230V	230V	230V
Nominal grid frequency	50/60Hz, ±5Hz	50/60Hz, ±5Hz	50/60Hz, ±5Hz	50/60Hz, ±5Hz	50/60Hz, ±5Hz	50/60Hz, ±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%
AC output power(Backup)						
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
Battery data						
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
Capacity of battery	50-2000AH	50-2000AH	50-2000AH	50-2000AH	50-2000AH	50-2000AH
Efficiency						
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	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Protection devices						
DC switch	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
General Data						
Dimensions (W / H / D)	547/516/170mm	547/516/170mm	547/516/170mm	547/516/170mm	547/516/170mm	547/516/170mm
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
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%
Features						
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	yes/yes /opt/opt	yes/yes /opt/opt	yes/yes /opt/opt	yes/yes /opt/opt	yes/yes /opt/opt	yes/yes /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

CE, IEC62109, G98/G99, VDE0126-1-1, AS4777, AS/NZS 3100, CEI 0-21, VDE-AR-N4105, UTE C 15-712
EN50438, EN50549, IEC 61727, IEC 62116, C10/11, UNE217007, UNE 206007, PO12.2

SPH 3000~6000TL BL-UP



- UPS without interruption
- IP65 & Natural cooling
- Online smart service
- Supports export limitation function

GROWATT · PRODUCT

Datasheet	SPH3000TL BL-UP	SPH3600TL BL-UP	SPH4000TL BL-UP	SPH4600TL BL-UP	SPH5000TL BL-UP	SPH6000TL BL-UP
Input data (DC)						
Max. recommended PV power (for module STC)	6600W	6600W	6600W	8000W	8000W	8000W
Start voltage	150V	150V	150V	150V	150V	150V
Max. DC voltage	550V	550V	550V	550V	550V	550V
MPPT voltage range/nominal voltage	150V-550V /370V	150V-550V /370V	150V-550V /370V	150V-550V /370V	150V-550V /370V	150V-550V /370V
No. of MPP trackers/strings per MPP trackers	2/1	2/1	2/1	2/1	2/1	2/1
Max. input current per MPP trackers	12A	12A	12A	12A	12A	12A
Output data (AC)						
AC nominal power	3000W	3680W	4000W	4600W	5000W	6000W
Max. AC apparent power	3000VA	3680VA	4000VA	4600VA	5000VA	6000VA
Nominal AC voltage/range	230V/240V; 180Vac-270Vac	230V/240V; 180Vac-270Vac	230V/240V; 180Vac-270Vac	230V/240V; 180Vac-270Vac	230V/240V; 180Vac-270Vac	230V/240V; 180Vac-270Vac
AC grid frequency/range	50/60Hz±5Hz	50/60Hz±5Hz	50/60Hz±5Hz	50/60Hz±5Hz	50/60Hz±5Hz	50/60Hz±5Hz
Max. output current	16A	16A	22A	22A	22A	27A
Adjustable 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 (at normal power)	<3%	<3%	<3%	<3%	<3%	<3%
AC grid connection type	Single phase	Single phase	Single phase	Single phase	Single phase	Single phase
Output data (Back-up)						
Max. AC apparent power*2	3000VA	3600VA	4000VA	4600VA	5000VA	6000VA
Nominal AC voltage	230/240Vac	230/240Vac	230/240Vac	230/240Vac	230/240Vac	230/240Vac
Nominal AC frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Max. output current	16A	16A	17.3A	20A	22A	27A
THDv(at linear load)	<3%	<3%	<3%	<3%	<3%	<3%
Automatic Transfer Time	<10ms	<10ms	<10ms	<10ms	<10ms	<10ms
Battery data (DC)						
Battery voltage range	42~59V	42~59V	42~59V	42~59V	42~59V	42~59V
Recommended battery voltage	48V	48V	48V	48V	48V	48V
Max. charging / discharging current	75A	75A	75A	75A	75A	75A
Continuous charging / discharging power	3600W	3600W	3600W	3600W	3600W	3600W
Max charging / discharge power	4000W/10s	4000W/10s	4000W/10s	4000W/10s	4000W/10s	4000W/10s
Type of battery	Lithium/lead-acid	Lithium/lead-acid	Lithium/lead-acid	Lithium/lead-acid	Lithium/lead-acid	Lithium/lead-acid
Capacity of battery	50Ah~2000Ah	50Ah~2000Ah	50Ah~2000Ah	50Ah~2000Ah	50Ah~2000Ah	50Ah~2000Ah
Efficiency						
Max. efficiency	97.2%	97.2%	97.2%	97.3%	97.3%	97.5%
Euro-eta	96.9%	96.9%	96.9%	97%	97%	97.1%
MAX. Battery charging/ discharging efficiency	94%	94%	94%	94%	94%	94%
Protection devices						
DC reverse-polarity protection	yes	yes	yes	yes	yes	yes
Battery reverse protection	yes	yes	yes	yes	yes	yes
DC switch	yes	yes	yes	yes	yes	yes
AC over voltage protection-varistor	yes	yes	yes	yes	yes	yes
AC short-circuit protection	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes	yes	yes
Residual-current monitoring unit	yes	yes	yes	yes	yes	yes
General Data						
Dimensions (W / H / D)	450/560/180mm	450/560/180mm	450/560/180mm	450/560/180mm	450/560/180mm	450/560/180mm
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	< 7 W	< 7 W	< 7 W	< 7 W	< 7 W	< 7 W
Topology	transformerless	transformerless	transformerless	transformerless	transformerless	transformerless
Cooling	Natural	Natural	Natural	Natural	Natural	Natural
Protection degree	IP65	IP65	IP65	IP65	IP65	IP65
Relative humidity	100%	100%	100%	100%	100%	100%
Interfaces						
Display	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED
RS232/RS485/CAN/USB	yes/yes/yes/yes	yes/yes/yes/yes	yes/yes/yes/yes	yes/yes/yes/yes	yes/yes/yes/yes	yes/yes/yes/yes
RF/WIFI/GPRS/4G	opt/opt/opt	opt/opt/opt	opt/opt/opt	opt/opt/opt	opt/opt/opt	opt/opt/opt
Warranty: 5 years / 10 years	5	5	5	5	5	5
IEC 61000-6-1, IEC 61000-6-3, IEC 62109-1/-2, IEC 62040-1, NRS 097-2-1/NRS 097-2-1						

*Continuous back-up power with only battery. **Can be reached only if PV and battery power is enough.

MIN 2500~6000 TL-XH



TL-XH series are battery ready inverter, the battery interface make it easily extend to storage system in the future which enable user to reduce the initial investment.

- Max. Efficiency 98.4%
- Dual MPP trackers
- Type II SPD on DC side
- 30% Lighter
- Storage ready
- Rapid shutdown & AFCI optional
- Compatible with double-glass bifacial modules

Datasheet	MIN 2500TL-XH	MIN 3000TL-XH	MIN 3600TL-XH	MIN 4000TL-XH	MIN 4600TL-XH	MIN 5000TL-XH	MIN 6000TL-XH
Input Data (PV)							
Max. recommended PV power (for module STC)	3500W	4200W	5150W	5600W	6440W	7000W	8100W
Max. PV voltage	500V	500V	550V	550V	550V	550V	550V
Start voltage	100V	100V	100V	100V	100V	100V	100V
Nominal voltage	360V	360V	360V	360V	360V	360V	360V
MPPT voltage range	70V~500V	70V~500V	70V~550V	70V~550V	70V~550V	70V~550V	70V~550V
Number of independent MPP trackers / strings per MPP tracker	2/1	2/1	2/1	2/1	2/1	2/1	2/1
Max. input current per MPP trackers	12.5A	12.5A	12.5A	12.5A	12.5A	12.5A	12.5A
Max. short-circuit current per MPP trackers	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A	16A/16A
Input Data (DC)							
Max. Input voltage	480V	480V	480V	480V	480V	480V	480V
Nominal DC Input voltage	350V	350V	350V	350V	350V	350V	350V
Max. Input current	10A	10A	10A	10A	10A	10A	10A
Output Data (AC Grid)							
AC nominal power	2500W	3000W	3600W	4000W	4600W	5000W	6000W
Max. AC apparent power	2500VA	3000VA	3600VA	4000VA	4600VA	5000VA	6000VA
Nominal AC voltage/range	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V
AC grid frequency/range	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz
Max. output current	10.8A	13A	16A	17.4A	20A	21.7A	26A
Adjustable 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	0.8leading~0.8lagging
THDi	<3%	<3%	<3%	<3%	<3%	<3%	<3%
AC grid connection type	L/N/PE	L/N/PE	L/N/PE	L/N/PE	L/N/PE	L/N/PE	L/N/PE
Output Data (Backup Power)							
AC nominal power	2500W	3000W	3000W	3000W	3000W	3000W	3000W
Max. AC apparent power	2500VA	3680VA	3680VA	3680VA	3680VA	3680VA	3680VA
Nominal AC voltage/range	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V	230V/187V~276V
AC grid frequency/range	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz	50Hz/45Hz~55Hz
THDv	<5%	<5%	<5%	<5%	<5%	<5%	<5%
Efficiency							
Max. efficiency	98.2%	98.2%	98.2%	98.4%	98.4%	98.4%	98.4%
Euro-eta	97.6%	97.6%	97.8%	98.0%	98.0%	98.0%	98.0%
MPPT efficiency	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Protection Devices							
DC reverse-polarity protection	yes	yes	yes	yes	yes	yes	yes
DC switch	yes	yes	yes	yes	yes	yes	yes
DC Surge protection	Type II	Type II	Type II	Type II	Type II	Type II	Type II
AC surge protection-varistor	yes	yes	yes	yes	yes	yes	yes
AC short-circuit protection	yes	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes	yes	yes	yes
Residual-current monitoring unit	yes	yes	yes	yes	yes	yes	yes
AFCI protection	opt	opt	opt	opt	opt	opt	opt
General Data							
Dimensions (W / H / D)	375/350/160mm	375/350/160mm	375/350/160mm	375/350/160mm	375/350/160mm	375/350/160mm	375/350/160mm
Weight	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG	10.8KG
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	-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)	≤25 dB(A)
Altitude	4000m	4000m	4000m	4000m	4000m	4000m	4000m
Self-Consumption night	< 1W	< 1W	< 1W	< 1W	< 1W	< 1W	< 1W
Topology	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Nature Convection	Nature Convection	Nature Convection	Nature Convection	Nature Convection	Nature Convection	Nature Convection
Environmental Protection Rating	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Relative humidity	100%	100%	100%	100%	100%	100%	100%
Features							
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Connector	Connector	Connector	Connector	Connector	Connector	Connector
Display	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP	OLED+LED/WIFI+APP
Interfaces: RS485/USB	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt	yes / yes / opt/opt/opt/opt
Warranty: 5 / 10 years	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt

SPH 4000~10000 TL3 BH



- IP65 & Natural cooling
- 3-Phase and Battery Ready
- Programmable working modes
- Compatible with high-voltage battery
- Online Smart Service



Datasheet	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
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Input data(DC)	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
Max. recommended PV power (for module STC)	5200W	6500W	7800W	9100W	10400W	13000W
Max. DC voltage	1000V	1000V	1000V	1000V	1000V	1000V
Start Voltage	160V	160V	160V	160V	160V	160V
MPP voltage range / normal voltage	160V-1000V / 600V	160V-1000V / 600V	160V-1000V / 600V	160V-1000V / 600V	160V-1000V / 600V	160V-1000V / 600V
Max. input current per MPP trackers	12A/12A	12A/12A	12A/12A	12A/12A	12A/12A	12A/12A
Max. short-circuit current per MPP trackers	15A/15A	15A/15A	15A/15A	15A/15A	15A/15A	15A/15A
Number of MPP trackers/ strings per MPP tracker	2/1	2/1	2/1	2/1	2/1	2/1

Output data(AC)	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
AC nominal power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Max. current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
Nominal AC voltage/range	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V
AC grid frequency/range	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz
Power factor(@nominal power)	1	1	1	1	1	1
Adjustable 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%
AC grid connection type	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE

Stand alone(AC power)	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
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	230V/400V	230V/400V	230V/400V	230V/400V	230V/400V
Nominal AC output frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
THDv	<3%	<3%	<3%	<3%	<3%	<3%
Switch time	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S

Battery data (DC)	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
Battery voltage range	100~550V	100~550V	100~550V	100~550V	100~550V	100~550V
Max charging and discharging current	25A	25A	25A	25A	25A	25A
Continuous charging and discharging power	4000W	5000W	6000W	7000W	8000W	10000W
Type of battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery
Capacity of battery	5~50kWh	5~50kWh	5~50kWh	5~50kWh	5~50kWh	5~50kWh

Efficiency	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
Max. efficiency	97.6%	97.8%	98.0%	98.2%	98.2%	98.2%
Euro European efficiency	97.0%	97.2%	97.3%	97.4%	97.4%	97.5%
Battery charge/discharge efficiency	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%

Protection devices	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
DC switch	yes	yes	yes	yes	yes	yes
DC reverse polarity protection	yes	yes	yes	yes	yes	yes
DC Surge protection	Type II	Type II	Type II	Type II	Type II	Type II
Battery reverse protection	yes	yes	yes	yes	yes	yes
AC short circuit protection	yes	yes	yes	yes	yes	yes
AC Surge protection	Type II	Type II	Type II	Type II	Type II	Type II
Ground fault monitoring	yes	yes	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes	yes	yes
Anti-islanding protection	yes	yes	yes	yes	yes	yes
Residual-current monitoring unit	yes	yes	yes	yes	yes	yes
Insulation resistance monitoring	yes	yes	yes	yes	yes	yes

General data	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
Dimensions (W / H / D)	505/453/198mm	505/453/198mm	505/453/198mm	505/453/198mm	505/453/198mm	505/453/198mm
Weight	28kg	28kg	28kg	28kg	28kg	28kg
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)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)
Altitude	3000m	3000m	3000m	3000m	3000m	3000m
Self-consumption night	<13W	<13W	<13W	<13W	<13W	<13W
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	0~100%	0~100%	0~100%	0~100%	0~100%	0~100%

Features	SPH 4000TL3 BH	SPH 5000TL3 BH	SPH 6000TL3 BH	SPH 7000TL3 BH	SPH 8000TL3 BH	SPH 10000TL3 BH
DC connection	H4 / MC4 (opt)	H4 / MC4 (opt)	H4 / MC4 (opt)	H4 / MC4 (opt)	H4 / MC4 (opt)	H4 / MC4 (opt)
AC connection	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal
Display	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED
RS232/RS485/CAN/USB	yes	yes	yes	yes	yes	yes
RF/WIFI/GPRS/4G	opt	opt	opt	opt	opt	opt
Warranty: 5 years /10 years	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt	yes / opt

SPA 1000~3000 TL BL



With Growatt SPA series AC-coupled battery inverter, it's quite easy to update any existing solar system to storage system at lower cost, together with Growatt ShineServer Portal, check your system's performance and energy consumption at any time.

- IP65 & Natural cooling
- Supporting Single&Three Phase system
- Workmodes programmable
- Online Smart Service

Datasheet	SPA1000TL BL	SPA2000TL BL	SPA3000TL BL
AC connection			
Rated AC apparent power	1000VA	2000VA	3000VA
Max. AC current	6A	10A	16A
AC nominal voltage (range)	230V (180V-270V)	230V (180V-270V)	230V (180V-270V)
AC grid frequency (range)	50/60Hz, ±5Hz	50/60Hz, ±5Hz	50/60Hz, ±5Hz
Power factor, configurable	0.8leading...0.8lagging	0.8leading...0.8lagging	0.8leading...0.8lagging
THDi	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase
AC output power (Back-up)			
Rated AC output apparent power	1000VA	2000VA	3000VA
Rated AC output voltage	230V	230V	230V
Rated AC output frequency	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz
Battery data			
Battery voltage range	42~59V	42~59V	42~59V
Max charging voltage	58V	58V	58V
Max charging and discharging current	24A	44A	66A
Peak charging and discharging power	1000W	2000W	3000W
Battery Type	Lithium /Lead-acid	Lithium /Lead-acid	Lithium /Lead-acid
Capacity of battery	50~2000AH	50~2000AH	50~2000AH
Efficiency			
Max. Charge efficiency	92.5%	94.0%	94.5%
Max. Discharge efficiency	92.0%	93.5%	94.0%
Protection devices			
Battery reverse protection	yes	yes	yes
Output over current protection	yes	yes	yes
Output over voltage protection-varistor	yes	yes	yes
Ground fault monitoring	yes	yes	yes
Grid monitoring	yes	yes	yes
Integrated all - pole sensitive leakage current monitoring unit	yes	yes	yes
General Data			
Dimensions (W / H / D)	428/458/180mm	428/458/180mm	428/458/180mm
Weight	17kg	17kg	17kg
Operating temperature range	- 25°C ... +60°C	- 25°C ... +60°C	- 25°C ... +60°C
Noise emission (typical)	≤ 25 dB(A)	≤ 25 dB(A)	≤ 25 dB(A)
Altitude	2000m	2000m	2000m
Self-Consumption	<4W	<4W	<4W
Inverter Topology	transformerless	transformerless	transformerless
DC/DC topology	HF transformer	HF transformer	HF transformer
Cooling concept	Natural	Natural	Natural
Environmental Protection Rating	IP65	IP65	IP65
Relative humidity	100%	100%	100%
Features			
AC connection	Connector	Connector	Connector
Battery connection	Screw	Screw	Screw
Display	LCD	LCD	LCD
Interfaces: RS485/ USB /CAN/WI-FI/RF	yes/yes/yes/opt/opt	yes/yes/yes/opt/opt	yes/yes/yes/opt/opt
Warranty:5 years/10 years	yes/opt	yes/opt	yes/opt

CE, IEC62109, G98, VDE0126-1-1, VDE-AR-N4105, CEI 0-21, IEC62116&IEC61727, EN50438, EN50549, AS4777, AS/NZS 3100, C10/11

SPA 4000~10000 TL3 BH



- IP65 & Natural cooling
- Supports Retrofit & New Systems
- Three work modes programmable
- Compatible with high-voltage battery
- Online Smart Service



Datasheet	SPA 4000TL3 BH	SPA 5000TL3 BH	SPA 6000TL3 BH	SPA 7000TL3 BH	SPA 8000TL3 BH	SPA 10000TL3 BH
Output data(AC)						
AC nominal 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 voltage/range	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V	230V/400V; 310~476V
AC grid frequency/range	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz	50/60Hz; 45~55Hz/55~65 Hz
Power factor(@nominal power)	1	1	1	1	1	1
Adjustable 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%
AC grid connection type	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE	3W+N+PE
Stand alone(AC power)						
Max. AC output power	4000W	5000W	6000W	7000W	8000W	10000W
Max. AC apparent power	4000VA	5000VA	6000VA	7000VA	8000VA	10000VA
Rated AC output voltage	230V / 400V	230V / 400V	230V / 400V	230V / 400V	230V / 400V	230V / 400V
AC grid frequency	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz	50Hz / 60Hz
Max. output current	6.1A	7.6A	9.1A	10.6A	12.1A	15.2A
THDv	<3%	<3%	<3%	<3%	<3%	<3%
Switch time	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S	<0.5S
Battery data(DC)						
Battery voltage range	100~550V	100~550V	100~550V	100~550V	100~550V	100~550V
Max charging current	25A	25A	25A	25A	25A	25A
Type of battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery	Lithium battery
Capacity of battery	5~50kWh	5~50kWh	5~50kWh	5~50kWh	5~50kWh	5~50kWh
Efficiency						
Battery charge/discharge efficiency	97.4%	97.4%	97.4%	97.4%	97.4%	97.4%
General data						
Battery reverse protection	yes	yes	yes	yes	yes	yes
Insulation resistance monitoring	yes	yes	yes	yes	yes	yes
AC surge protection	Type II	Type II	Type II	Type II	Type II	Type II
AC short-circuit protection	yes	yes	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes	yes	yes
Anti-islanding protection	yes	yes	yes	yes	yes	yes
Residual-current monitoring unit	yes	yes	yes	yes	yes	yes
General data						
Dimensions (W / H / D) in mm	505/453/198	505/453/198	505/453/198	505/453/198	505/453/198	505/453/198
Weight	28kg	28kg	28kg	28kg	28kg	28kg
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)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)	≤ 35 dB(A)
Altitude	3000m	3000m	3000m	3000m	3000m	3000m
Self-Consumption	<13 W	<13 W	<13 W	<13 W	<13 W	<13 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	0~100%	0~100%	0~100%	0~100%	0~100%	0~100%
Features						
AC connection	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal	Cable gland+OT terminal
Battery connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
Display	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED	LCD+LED
RS232/RS485/CAN/USB	yes	yes	yes	yes	yes	yes
RF/WIFI/GPRS/4G	opt	opt	opt	opt	opt	opt
Warranty:5 years/10 years	yes/opt	yes/opt	yes/opt	yes/opt	yes/opt	yes/opt

IEC 61000, IEC 62109, IEC 62040, VDE-AR-N 4105, VDE 0126, UTE C 15-712, EN50549, CEI 0-21, IEC62116, IEC61727, AS/NZS 4777, G98, IEC 62477, C10/11

PMX 3000~5000 TL-XL



- All-In-One Solution
- 5kW charging and discharging power
- Excellent safety of LiFePO4 battery
- 6.5kWh and 13kWh battery capacity optional

Datasheet	PMX 3000~5000TL-XL	PMX5000TL-X
Specifications		
Max.recommended PV power(for module STC)	8100W	8100W
AC nominal power	5000W	5000W
Weight	142/200kg	210kg
Battery Capacity	6.5/13kWh	13.0kWh
Max. charging and discharging power	3KW	5KW
Back-up power (EPS, ATS integrated)	3KVA	5KVA
Ingress protection	IP54	
Dimensions (W / H / D)	800/1670/39mm	
Operating temperature range	-10°C~45°C (with derating above 45°C)	
Warranty	5 year inverter warranty, 10 year battery warranty	
Inverter Specifications		
Model	MIN 5000 TL-XH	
Max. PV voltage	550V	
Start voltage	100V	
Nominal voltage	360V	
MPP voltage range	80V~550V	
No. of MPP trackers	2	
Max. input current per MPP trackers	12.5A	
AC output power	5000W	
Nominal AC voltage/range	230V,187V~276V	
Max. output current	21.7A	
AC grid frequency range	50Hz±5Hz	
Power factor(@nominal power)	>0.99	
Adjustable power factor	0.8leading~0.8lagging	
THDI	<3%	
Display	OLED+LED/WIFI+APP	
Altitude	4000m	
Relative humidity	0~100%	
AC grid connection	Single Phase	
Certificate	CE, AS/NZS 4777.2, G98	
Battery Specifications		
Normal Capacity	6.5kWh	
Usable Energy	6.0kWh	
Typical Voltage	51.2V	
Operating Voltage	48~57.6V	
Max. Charging/Discharging Current	64A	
Operating Ambient Temperature	-10°C~45°C	
Cycle life (25°C)	≥6000 Cycle	
Weight	58±1kg	
Dimensions (W / H / D)	475/745/133mm	
Certificate	UN38.3+PI965	

LV Modular Battery



HV Modular Battery



Datasheet	ARK 2.5L	ARK 5.1L	ARK 7.6L	ARK 10.2L	ARK 12.8L	ARK 15.3L	ARK 17.9L	ARK 20.4L	ARK 23.0L
Battery Module	ARK 2.5L-A1 (2.56kWh, 51.2V, 30kg)								
Number of Modules	1	2	3	4	5	6	7	8	9
Energy Capacity	2.56kWh	5.12kWh	7.68kWh	10.24kWh	12.8kWh	15.35kWh	17.92kWh	20.48kWh	23.04kWh
Dimension (W/D/H)	650/260/170mm	650/260/340mm	650/260/510mm	650/260/680mm	650/260/850mm	650/260/1020mm	650/260/1190mm	650/260/1360mm	650/260/1530mm
Weight	30kg	60kg	90kg	120kg	150kg	180kg	210kg	240kg	270kg
Max Charge/Discharge Current	25A	50A	75A	100A	120A	120A	120A	120A	120A
Battery Type	Cobalt Free Lithium Iron Phosphate (LFP)								
Nominal Voltage	51.2V								
Operating voltage Range	47.2 - 56.8V								
IP Protection	IP65								
Installation	Wall-mounted or *Floor installation								
Operation Temperature	0~45°C								
Features									
DoD	90%								
Cycle Life	>6000								
BMS Monitoring Parameters	SOC, System voltage, current, cell voltage, cell temperature, PCBA temperature measurement								
Communication Port	CAN/RS485								
Warranty	10 Years								
Certification	IEC62619 (Cell&Pack) /CE/CEC/RCM, UN38.3								

*Floor installation requires extra base (W/D/H=650/260/110 mm)

Datasheet	ARK 5.1H	ARK 7.6H	ARK 10.2H	ARK 12.8H	ARK 15.3H	ARK 17.9H	ARK 20.4H	ARK 23.0H	ARK 25.6H
Battery Module	ARK 2.5H-A1 (2.56kWh, 51.2V, 30kg)								
Number of Modules	2	3	4	5	6	7	8	9	10
Energy Capacity	5.12kWh	7.68kWh	10.24kWh	12.8kWh	15.36kWh	17.92kWh	20.48kWh	23.04kWh	25.6kWh
Nominal Voltage	102.4V	153.6V	204.8V	256V	307.2V	358.4V	409.6V	460.8V	512V
Operating Voltage Range	94.4-113.6V	141.6-170.4V	188.8-227.2V	236-284V	283.2-340.8V	330.4-397.6V	377.6-454.4V	424.8-511.2V	472-568V
*Dimension (W/D/H)	610/250/570mm	610/250/770mm	610/250/970mm	610/250/1170mm	610/250/1370mm	610/250/1570mm	610/250/1770mm	610/250/1970mm	610/250/2170mm
Weight	70kg	100kg	130kg	160kg	190kg	220kg	250kg	280kg	310kg
Battery Type	Cobalt Free Lithium Iron Phosphate (LFP)								
Standard Charge/Discharge Current	25A@0.5C								
Max Charge/Discharge Current	50A@1C								
IP Protection	IP65								
Installation	Wall-mounted or **Floor installation								
Operation Temperature	0~45°C								
Features									
DoD	90%								
Cycle Life	> 6000								
Warranty	10 years								
BMS Controller	HVC 60050-A1								
Weight	10kg								
Communication Port	CAN/RS485								
Dimension(W/D/H)	610/250/170 mm								
BMS Monitoring Parameters	SOC, System voltage, current, cell voltage, cell temperature, PCBA temperature measurement								
Certification	IEC62619 (Cell&Pack)/CE/CEC/RCM/UN38.3								

*Include BMS controller

**Floor installation requires extra base (W/D/H=610/250/170 mm)

LV BATTERY



Datasheet US2000 Box

Case Data

Battery scalability	2PCS each box
Cabinet scalability	Vertical or horizontal maximum four cabinets
Installation	Wall mounted
Size	650x550x245mm (W*H*D)
Weight	12kg cabinet only
IP rating	IP55
Working temperature	0-45°C
Parallel cables	optional*

Battery Module US2000

Battery Data

Nominal Voltage	48V
Normal Capacity	2400Wh
Usable Capacity	2200Wh
Discharge Voltage	45 ~ 53.5V
Charge Voltage	52.5 ~ 53.5V
Charge/Discharge Current	≤25A (Recommended) 50A (Max) 100A (Peak@15sec)

General Data

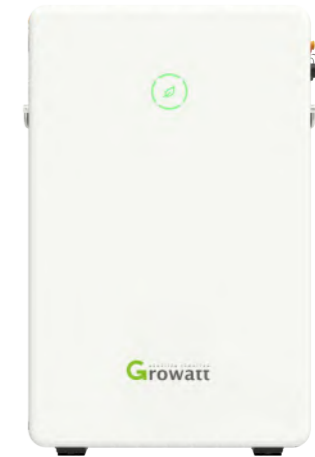
Dimension (mm)	440*410*88.5mm
Weight	24Kg
Working temperature	0°C~50°C
Storage Temperature	0°C~45°C
Protection Class	IP20

Features

Design Life	10 Years (25°C/77°F)
Cycle Life	>6000 (25°C, 90% DoD)
Single string quantity	8pcs
Communication Port	CAN/RS485
Certificate	TÜV , CE , UN38.3

*The parallel cables between 2 cases are optional, the parallel cables between 2 batteries are standard in each battery package.

LV BATTERY



Datasheet Growatt GBLI6532

Battery Data

Nominal Voltage	51.2V
Normal Capacity	6.5kWh
Usable Capacity	6kWh
Operating voltage	48 ~ 57.6V
Charging/Discharging Current	104.2A
MAX discharging power	5kW

General Data

Dimension (W/H/D)	475/745/149mm
Weight	58Kg
IP Protection	IP55
Working temperature	-10°C~+50°C
Storage Temperature	-20°C~+45°C

Features

DoD	92%
Cycle Life	>6000
System Connection	Max. 8 pcs in parallel
Communication Port	CAN2.0 / RS485
Warranty	10 Years

Certificate IEC62619/CE/RCM/UL1973/CEC/UN38.3+PI965

* When the temperature is below 0 °C or above 45°C, the performance will be limited.

HV BATTERY



HV BATTERY CABINET



Datasheet	ML 26RT
Battery Data	
Nominal Voltage	51.2V
Normal Capacity	2.66kWh
Usable Capacity	2.53kWh
Operating voltage	48 ~ 57.6V
Max Charging/Discharging Current	52A
General Data	
Dimension (W/D/H)	440/131/340 mm
Weight	25kg
IP Protection	IP20
Working temperature	-10°C~+50°C
Storage Temperature	-20°C~+45°C
Features	
DoD	95%
Cycle Life	>6000
Battery scalability	3 ~ 8 pcs in series
Communication Port	CAN
Warranty	10 Years
IEC62619 / UL1973+FCC Class B / RCM/ JISC8715-1&2/ JISC6950-1/CE/UN38.3	

Datasheet	Growatt ML26RT Box					
Battery Module	ML26RT					
Module Energy	2.66kWh					
Number of Modules	3	4	5	6	7	8
Energy Capacity	7.98kWh	10.64kWh	13.3kWh	15.96kWh	18.62kWh	21.28kWh
Usable Capacity	7.59kWh	10.12kWh	12.65kWh	15.18kWh	17.71kWh	20.24kWh
Nominal Voltage	153.6V	204.8V	256V	307.2V	358.4V	409.6V
Operating Voltage Range	144-170.4V	192-227.2V	240-284V	288-340.8V	336-397.6V	384-454.4V
Box Dimension (W/D/H)	650/300/1200mm			650/300/1200mm/2pcs		
Weight	117kg	142kg	202kg	227kg	252kg	277kg
Battery Type	LFP (LiFePO4)					
Max Charge/Discharge Current	52A					
IP Protection	IP55					
Installation	Floor installation					
Operation Temperature	-10°C ~ +50°C					
Features						
DoD	95.00%					
Cycle Life	≥6000cycle					
Warranty	10 years					
System Scalability	Max. four complete systems in parallel connection					
Certificate	IEC62619 / UL1973+FCC Class B / RCM/ JISC8715-1&2/ JISC6950-1/CE/UN38.3					
BMS Controller	HV-Box					
Input and Output Voltage Range	134.4~460.8Vdc					
Max Charge and Discharge current	55A					
Serial Module number	3~8					
Weight	7kg±1Kg					
Communication Port	CAN2.0*2, RS485*1					
Dimension(W/D/H)	180/445/131 mm					
BMS Monitoring Parameters	SOC, System voltage, current, cell voltage, cell temperature, PCBA temperature measurement					
Certificate	CE/UN38.3					

HV BATTERY



Datasheet		H48050
Battery Data		
Battery Capacity		2.4kWh
Nominal Voltage		48Vdc
Voltage Range		45~54Vdc
Nominal Capacity		50AH
Depth of Discharge		80%(10~90%)
General Data		
Weight		24KG
Dimension(W/D/H,mm)		442/390/100
Operation Temperature		0~50°C
Storage Temperature		-20~60°C
Protection Class		IP20
Features		
Communication		RS485/CAN
Design Life		10+Years
Cycle Life		>6000 (25°C, 90% DoD)
Certificate		TÜV , CE , UN38.3

HV BATTERY CABINET



H48050 BOX-4

H48050 BOX-6

Datasheet	H48050 BOX-4	H48050 BOX-6
BMS type	SC1000-100S, SC500-100S	SC0500A-100S
Battery type	Growatt H48050	Growatt H48050
Battery scalability	4 Pcs each box	6 Pcs each box
Battery Module Quantity	4-10 Pcs	4-10 Pcs
Cabinet scalability installation	Vertical maximum three cabinets	horizontal maximum two cabinets
installation	Floor installation	Floor installation
Dimension (W/H/D)	630/655/550mm	600/890/550mm
Weight	40Kg cabinet only	40Kg cabinet only
IP rating	IP55	IP20
Working temperature	0-50°C	0-50°C
Certificate	TÜV (IEC 62619)	

BMS Controller	SC0500A-100S	SC1000-100S
Battery Data		
System Operation	100~435Vdc	200~1000Vdc
Charge /Discharge Current (Max.)	100A	100A
Discharge Voltage (Vdc)	100~435V	200~1000V
Available battery number	4~7pcs	5~10pcs
General Data		
Dimension (W/H/D)	442/390/132mm	442/270/132mm
Weight	6.5Kg	8.2Kg
Working temperature	-20~65°C	-20~65°C
Storage Temperature	-40~80°C	-40~80°C
Features		
Operation Life	15 Years	15 Years
Communication Port	CAN	CAN
TÜV (IEC 62619)		

ACCESSORIES

ENERGY METER

Single phase and three-phase
Work with Growatt's storage inverter



ACCESSORIES

GROWATT ATS-S

Auto Transfer Switch Single Phase
Plug and play



Datasheet	Single	Three
Electrical Data		
Normal voltage	230Vac	3×230/400Vac
Voltage range	161V~276V	184V~264.5V/320V~460V
Voltage input type	1p2w	1p2w/3p3w/3p4w
Normal current/Max. current	5~60A	0.25-5(80)A
Frequency	45Hz~65Hz	50Hz/60Hz
Start up current	50mA	20mA
Active energy accuracy	class 1.0	class 1.0
General data		
Dimensions	36x85x66 (WxHxD)	100x72x65(LxWxH)
Weight	228g	360g
Operation temperature range	-25 °C ... +55 °C	-10 °C ... 45 °C
Relative Humidity	≤75%	≤75%
Mounting	DIN rail 35mm	DIN rail 35mm
Display	LCD	LCD
Self-consumption	<2W	<2W
Altitude	3000m	3000m
Environment protection rating	IP51 (indoor)	IP51 (indoor)
Accessories	RS 485	RS 485
Communication	RS 485 cable	RS 485 cable
Certificate	CE	

Product model	Growatt ATS-S
Grid	
Normal Voltage	230V
Normal frequency	50/60Hz
Max current	30A
EPS	
Normal Voltage	230V
Normal frequency	50/60Hz
Max current	30A
Load	
Normal Voltage	230V
Normal frequency	50/60Hz
Max current	30A
General Data	
Cooling concept	Natural
Environmental protection rating	IP65
Installation	Wall-mounted
Operating Ambient Temperature	-25%~+50°C
Weight	2.38kg
Dimensions (W×H×D)	250*200*86 mm
Certificate	CE

ACCESSORIES

GROWATT ATS-T

Auto Transfer Switch Three Phase
Plug and play



Product model	Growatt ATS-T
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Grid

Normal Voltage	230V/400Vac
Normal frequency	50/60Hz
Max current	30A

EPS

Normal Voltage	230V/400Vac
Normal frequency	50/60Hz
Max current	30A

Load

Normal Voltage	230V/400Vac
Normal frequency	50/60Hz
Max current	30A

General Data

Cooling concept	Natural
Environmental protection rating	IP65
Installation	Wall-mounted
Operating Ambient Temperature	-25%~+50°C
Weight	3.8kg
Dimensions (W×H×D) in mm	312*295*85 mm
Certificate	CE

MONITORING EQUIPMENT



- > WiFi communication
- > Easy configure via APP
- > Support remote upgrade

Datasheet	ShineWiFi-S
Wireless Parameters	
Wireless standard	802.11 b/g/n
Frequency range	2412M ~ 2484M
Hardware Parameters	
Data interface	RS232(Modbus RTU protocol)
Operating voltage	9V(+/-5%)
Operating current	100mA
Application on Parameters	
Supported servers	ShineServer
Inverter communication	RS232(Modbus RTU protocol)
Server communication	TCP(Modbus TCP protocol)
Support network	2.4G WIFI
Max. communication range	50m
Max. power consumption@transmit	1.2W
Configure type	APP configure
Data transfer interval	5 Minutes
Default server URL	server.growatt.com
General Data	
Dimensions(Length/Width/Height)	135/79/29 mm
Weight	60g
Operating temperature	-20°C~+65°C
Certificate	CE

Datasheet	ShineLink
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Communication Interface

RF433	Yes
Max. Communication Range	
RF433(in free-field conditions)	up to 100m
RF433(two walls blocking)	20 m

Power Supply

AC power supply input voltage	100V~240V
AC power supply input frequency	50/60Hz
Power consumption	<2W standby, <5W peak

General Specifications

Dimensions(L/H/W)mm	105/85/26mm
Weight	< 1kg
Mounting options	Tabletop/wall-mount
Degree of protection	IP30
Status display	LED
Ambient temperature range	-25 to 60 °C
Humidity	0-95% (non condensing)

Features

Programmable dry contact	Opt
Remote firmware upgrades	Yes
Max. number of devices to monitor	8(RF433)
Warranty	1 years
Certificate	CE



- > RF communication
- > Plug-and-play
- > No need configuration
- > Support remote upgrade

MONITORING EQUIPMENT

- > GPRS communication
- > Easy configure via APP
- > Support remote upgrade



Datasheet	ShineGPRS
Wireless Parameters	
Network type	2G GSM(GPRS)
GSM/GPRS/EDGE frequency range	850/900/1800/1900MHZ
UMTS/HSDPA frequency range	NA
Antenna gain	3dBI
Max output power	GSM850/GSM900: 2W DCS1800/PCS1900: 1W
Speed	GPRS -Max.85.6Kbps(DL),MAX.42.8Kbps(UL)
Hardware Parameters	
Serial port speed	9600bps
Operating voltage	9V(+/-15%)
Operating current	1.5A
Operating temperature	-40°C ... +85°C
Application Parameters	
Communication with inverter	RS232(Modbus RTU protocol)
Communication with server	TCP(Modbus TCP protocol)
Network supported	2G GSM(GPRS)
Configuration interface	APP
SIM type	regular SIM card
Uploading interval	5 Mins(1-15 adjustable)
Default server IP	server.growatt.com
General Data	
Dimensions(Length/Width/Height)	135/79/29 mm
Weight	70g
Warranty	1 year
Certificate	CE

EXCEPT THE STRENGTHS OF PRODUCT WITH GROWATT, YOU CAN ALSO ENJOY:

Powerful Monitoring Platform

ShineServer and ShinePhone are the new generation monitoring systems developed by Growatt and freely open to our users.



Awesome display interface

- Simple and elegant
- Clear and easy to understand

Everything at a glance

- Energy flow indication
- Real-time operating data
- Additional useful information

Powerful cloud server

- User data security
- Up to 10 years user data storage
- Continues data upload even local network outage

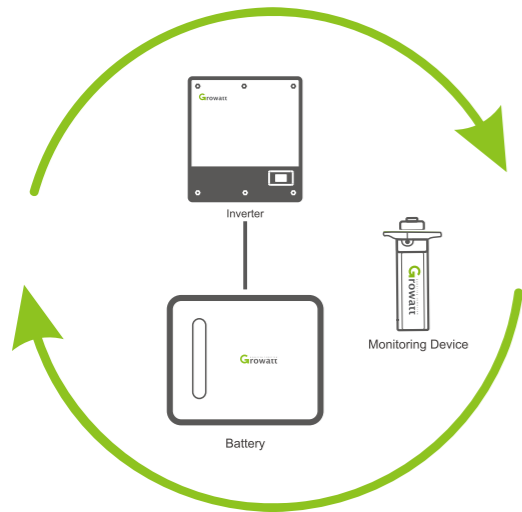
Managing wherever you are and whatever you want

- Mobile APP platform
- Working mode adjustable
- Inverter parameters are adjustable



EXCELLENT SERVICE WITH GROWATT

Whole System Service



Complete equipment supply

- Inverter, battery, monitoring system and accessories
- Deep compatibility between devices
- More reliable

Whole system guarantee

- Guidance and help of the whole process
- Warranty for all devices
- Professional local after-sales team

Smart Online Service System (OSS)



Growatt Online Smart Service (OSS in short) system is a smart customer service platform, which can offer a quick support for service, lowering service costs for both Growatt installers and distributors. With the help of Growatt OSS, service engineers almost can handle 60%+ problems by remote configuration and FW updating without on-site service.

PROJECT CASES

UK, Chichester
3.6kW, Growatt SPH3600



Italy, Milan
3kW, Growatt SPA3000TL BL



Denmark, Middelfart
3.6kW, Growatt SPA 3000TL



PROJECT CASES

Denmark
5kW, Growatt SPH5000



Italy, Venezia
4.6kW, Growatt SPH4600



Italy, Roma
3kW, Growatt SPA3000TL BL



Australia, Melbourne
6kW, Growatt SPH6000



Australia, Brisbane
6kW, Growatt SPH6000

