



powering tomorrow
Growatt



GROWATT NEW ENERGY TECHNOLOGY CO.,LTD

No.28 Guangming Road, Longteng Community, Shiyan,
Bao' an District, Shenzhen, P.R.China.

T: + 86 755 2747 1900 F: + 86 755 2749 1460

E: info@ginverter.com W: www.ginverter.com

» GR-CA-013-03

www.ginverter.com



MTL-string technology
Leading Transformerless
full - range product
Convection without fan
High power density
High quality production

Safe

internal DC switch protection

Simple

Compact design with light weight
Easily accessible front wiring compartment

Communication

RS485 RS232 WIFI GPRS
PV monitoring system



High yield

Maximum efficiency over 99.06%

MPPT efficiency over 99.5%

Contents

A/07-11

Single Phase Inverter

07/ Growatt 1000-S / 1500-S / 2000-S / 3000-S

09/ Growatt 2500MTL-S / 3000MTL-S

11/ Growatt 3600MTL-S / 4200MTL-S / 5000MTL-S / 5500MTL-S



B/15-17

Three Phase Inverter

15/ Growatt 10000UE / 12000UE / 18000UE / 20000UE

17/ Growatt 30000TL3-S / 33000TL3-S / 40000TL3-S



C/21-23

Storage Product

21/ Growatt SP1000/SP2000/SP3000

23/ Growatt GBLI2701/GBLI5001



D/27-37

Monitoring System

27/ ShineVision

29/ ShineWiFi

31/ ShineGPRS / Shine3G

33/ ShineWebBox

35/ ShineServer

37/ ShinePhone





A New Milestone for Photovoltaic

As the CEO of Growatt New Energy, I am very honored to recommend our excellent team, our high-efficient and cost-effective inverters and smart energy management system and other supporting service to all the partners.

Known by all the customers, Growatt is a new energy company based on an R&D team with 10 years experience in PV and power industry. Growatt team has always been committed to more cost-effective new energy product design and maintains sustainable progress. The technology and product performance has been assessed A level by world first-class certification company and EPC company.

From 2010, Growatt start the R&D and sales for the photovoltaic inverter, until now Growatt has reached an installation of 2.7GW worldwide, quickly growing as the world leading supplier of cost-effective inverters with high efficiency.

Growatt has a full production line of inverters from 1kW to 1.26MW, together with our smart energy management system, which are applicable for residential & commercial roof and ground plants. In

residential application, Growatt provides more efficient and lighter inverters, winning a more extensive global market coverage compared with competitors, while offering simple and more intelligent experience for home users. In utility scale and large power station, more stable and effective inverters together with smart energy management system, also give customers more cost competitive advantage.

Together with the efficient inverters, Growatt provides every customer excellent pre-sales and after-sales service, to ensure the matching products for customized demands, perfect product application service, and prompt maintenance guide. For customers, Growatt is more than just a supplier, but a more reliable partner.



About Growatt

Growatt New Energy Technology Co., Ltd was established on May 2010, a professional and vigorous new energy company focusing on photovoltaic inverters. Until now, Growatt has reached over 2.7GW installation worldwide, famous as a world leading manufacturer of cost-effective photovoltaic inverters with high efficiency.

Our Products

Growatt offers a full line of solar inverters from 1KW to 1.26MW, together with our smart energy monitoring and managing systems, which are completely applicable for residential, commercial roof, utility-scale plant, and small off-grid system. Until now, Growatt has reached over 2.7GW installation in Europe, America, Africa, and Asia Pacific. To be worth raising, Growatt has been the largest inverter exporter for 5 years, being the most popular Chinese inverter supplier in international market.

Our Achievement

At the start of 2012, Sequoia Capital and China Merchants have invested in Growatt strategically, which is the basis for the high and stable development of Growatt. With the excellent performance in both domestic and international market, Growatt has been awarded with some honorable titles, like "TOP 5 Inverter Suppliers in China" "2013 Top 10 Enterprises of Innovation in China" "Equipment China-Award of Innovation Product Pioneer" "2014 Top 10 String Inverter Manufactures in China" "2015 Top 10 String Inverter Manufactures in China"etc.

Growatt, with big steps, is developing to be the Growatt Group, which will consist of 6 business departments, i.e. 1-40kW string inverters, 100kW-1.26MW central inverters, solar system EPC, electric vehicle charger, backup energy system, and investment business dept., and determined into be the leader in the power electronics industry.

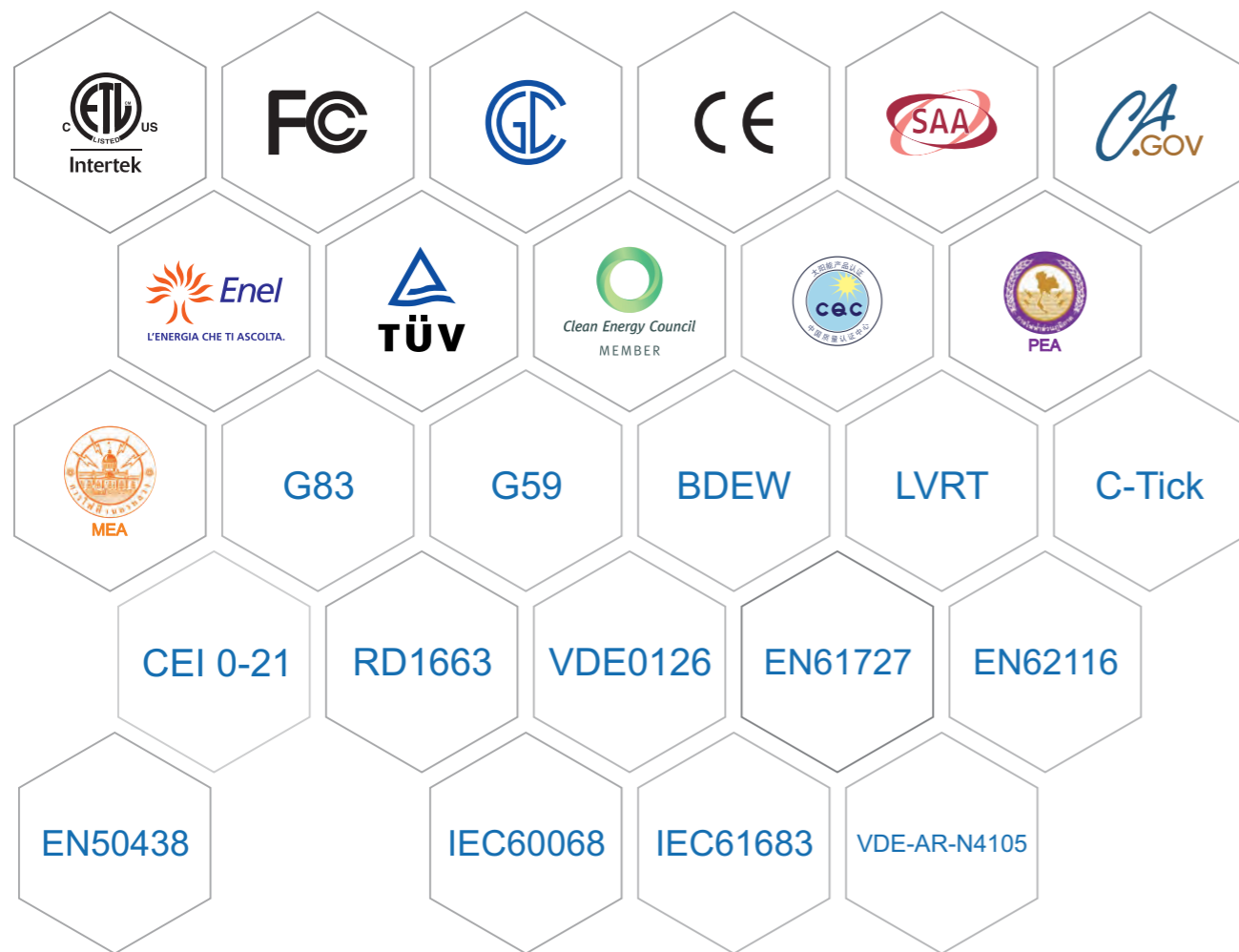


Our R&D and Service Team

With a R&D team more than 100 engineers, 40% of the staff, who has been deeply engaged in the photovoltaic industry for 10 years, Growatt takes the mission to increase the inverter availability and efficiency, putting continuous innovation to make Growatt inverter easier for installation and operation, and more cost-effective for solar plant construction.

Other than the R&D team, building an elite service team is Growatt's another goal. In Growatt, service is not only the basic principle, but also blends into the hearts of the staff, and reflects in the daily work of everyone. In order to improve the service system worldwide, Growatt has established branch offices in Frankfurt, Sydney, Los Angeles, Shenzhen, Hongkong, and Beijing.

Certification



With world-class components suppliers

Growatt chooses world-class suppliers to ensure the high quality of its products. With top-class partners Growatt provides inverters with high quality and efficiency to the whole world.

Mos IGBT

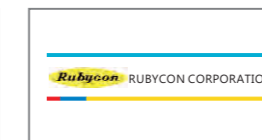


IC

Fuse



Capacitor



Current Transducer



Relay



Diode



MCU





A/Single Phase Inverter

07/ Growatt 1000-S / 1500-S / 2000-S / 3000-S

09/ Growatt 2500MTL-S / 3000MTL-S

11/ Growatt 3600MTL-S / 4200MTL-S / 5000MTL-S / 5500MTL-S

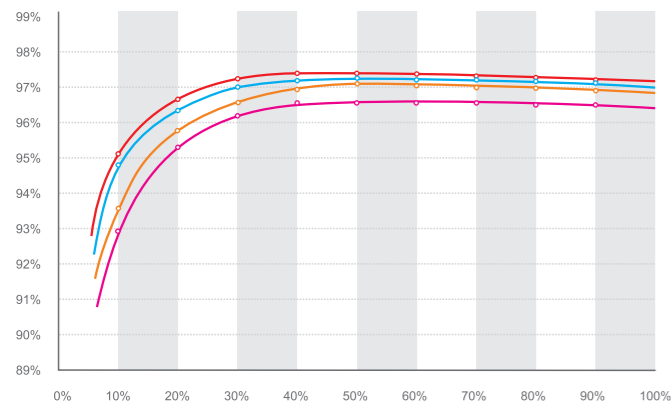
Growatt 1000-S / 1500-S / 2000-S / 3000-S

Leading – edge Technology

- Maximum efficiency of 97.6% and wide input voltage range
- Internal DC switch
- Transformerless GT topology
- Compact design
- Ethernet / RF technology / Wi-Fi
- Sound control
- Easy installation
- Comprehensive Growatt warranty program

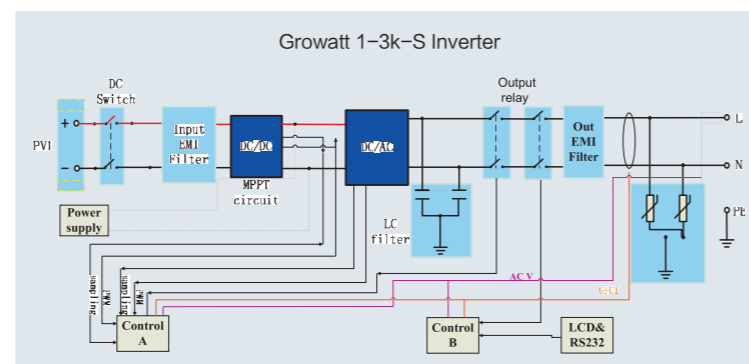


Growatt 1500-S efficiency



■ 200V
■ 250V
■ 300V
■ 400V

Growatt 1-3k -S topology



Datasheet	Growatt 1000-S	Growatt 1500-S	Growatt 2000-S	Growatt 3000-S
Input data (DC)				
Max. recommended PV power (for module STC)	1300W	1900W	2300W	3400W
Max. DC voltage	450V	450V	450V	550V
Start voltage	80V	80V	80V	80V
PV voltage range	70V-450V	70V-450V	70V-450V	70V-550V
MPP work voltage range/ nominal voltage	70V-450V/180V	70V-450V/250V	70V-450V/360V	70V-550V/360V
Full load dc voltage range	110V-400V	175V-400V	200V-400V	250V-500V
Max. input current	10A	10A	11A	13A
Max. input current per string	10A	10A	11A	13A
Number of independent MPP trackers /strings per MPP tracker	1/1	1/1	1/1	1/2
Output (AC)				
Rated AC output power	1000W	1600W	2000W	3000W
Max. AC power	1000W	1650W	2000W	3000W
Max. output current	4.7A	7.8A	9.5A	14.3A
AC nominal voltage; range	220,230,240V; 180Vac-280Vac	220,230,240V; 180Vac-280Vac	220,230,240V; 180Vac-280Vac	220,230,240V; 180Vac-280Vac
AC grid frequency; range	50,60 Hz; ± 5 Hz	50,60 Hz; ± 5 Hz	50,60 Hz; ± 5 Hz	50,60 Hz; ± 5 Hz
Power factor	1	1	1	1
THDI	<3%	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase	Single phase
Efficiency				
Max. efficiency	97.4%	97.4%	97.4%	97.6%
Euro weighted efficiency	96.5%	97%	97%	97.3%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch rating for each MPPT	opt	opt	opt	opt
Output over current protection	yes	yes	yes	yes
Output over voltage protection-varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated all – pole sensitive leakage current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D) in mm	271*267*142	271*267*142	271*267*142	271*320*142
Weight	6.1KG	6.1KG	6.1KG	8.8KG
Operating temperature range	- 25°C ... +60°C with derating above 45°C	- 25°C ... +60°C with derating above 45°C	- 25°C ... +60°C with derating above 45°C	- 25°C ... +60°C with derating above 45°C
Noise emission (typical)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)	≤25 dB(A)
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Self-Consumption night	<0.5 W	<0.5 W	<0.5 W	<0.5 W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Relative humidity	100%	100%	100%	100%
Features				
DC connection	H4	H4	H4	H4
AC connection	Connector	Connector	Connector	Connector
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/ RF/ Wi-Fi/ LAN/ GPRS	yes/ opt/ opt/ opt/ opt	yes/ opt/ opt/ opt/ opt	yes/ opt/ opt/ opt/ opt	yes/ opt/ opt/ opt/ opt
Warranty: 5 years / 10 years	yes /opt	yes /opt	yes /opt	yes /opt

CE, VDE 0126-1-1, IEC62109, G83, As4777, AS/NZS 3100, CE10-21, VDE AR-N4105, EN50438, CQC

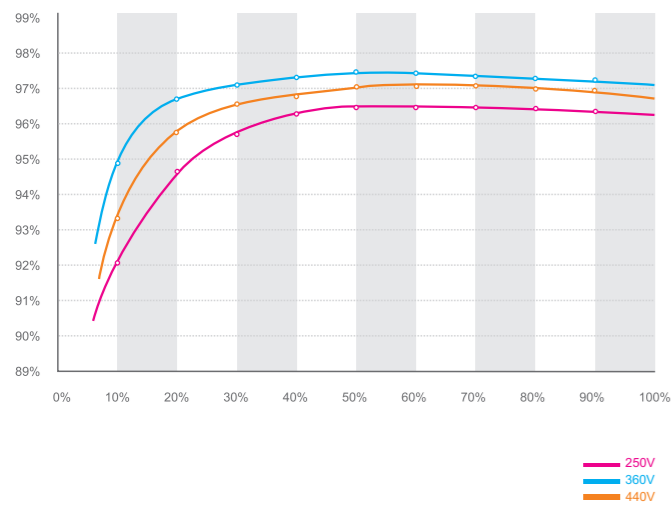
Growatt 2500 MTL-S / 3000 MTL-S

Leading – edge Technology

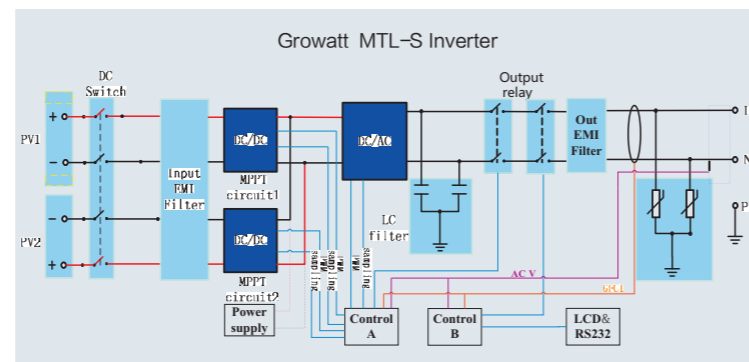
- Double MPPT Tracker, MPPT tracking accuracy more than 99.5%
- Max. Efficiency 97.6%, European Efficiency 97.4%
- Integrated DC switch for added safety protection
- Transformerless design and high power density, offer lighter and more convenient installation
- 5 years standard warranty
- Power factor continuously adjustable
- Flexible communication connection, support RF, WiFi, LAN
- Comply with European, Asia-Pacific safety regulations



Growatt 3000MTL-S efficiency



Growatt 2.5-3k MTL-S topology



Datasheet	Growatt 2500 MTL-S	Growatt 3000 MTL-S
Input Data		
Max. DC power	2900W	3500W
Max. DC voltage	500V	500V
Start voltage	100V	100V
PV voltage range	70V – 500V	70V – 500V
MPPT work voltage range/nominal voltage	80V–500V/360V	80V–500V/360V
Full load dc voltage range	130V – 450V	160V – 450V
Number of independent MPP inputs /strings per MPP input	2 / 1	2 / 1
Max. input current of tracker A /tracker B	10A / 10A	10A / 10A
Max. input current per string of tracker A/tracker B	10A / 10A	10A / 10A
Output (AC)		
Rated AC output power	2500W	3000W
Max. AC power	2500VA	3000VA
Max. output current	11.3A	13.6A
AC nominal voltage; range	220V/230V/240V; 180V – 280V	220V/230V/240V; 180V – 280V
AC grid frequency; range	50,60Hz; ± 5 Hz	50,60Hz; ± 5 Hz
Power factor	1	1
THDI	<3%	<3%
AC connection	Single phase	Single phase
Efficiency		
Max. efficiency	97.6%	97.6%
Euro-eta	97%	97%
MPPT efficiency	99.5%	99.5%
Protection Devices		
DC reverse polarity protection	yes	yes
DC switch for each MPPT	yes	yes
Output over current protection	yes	yes
Output overvoltage protection –varistor	yes	yes
Ground fault monitoring	yes	yes
Grid monitoring	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes
General Data		
Dimensions (W / H / D)	355/419/138 mm	355/419/138 mm
Weight	14kg	14kg
Operating temperature range	-25 ° C ... +60 ° C	-25 ° C ... +60 ° C
Noise emission (typical)	≤ 25 dB(A)	≤ 25 dB(A)
Self-Consumption (night)	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless
Cooling concept	Natural	Natural
Environmental Protection Rating	IP 65	IP 65
Altitude	2000m without derating	2000m without derating
Relative Humidity	100%	100%
Features		
DC connection	H4/MC4(opt)	H4/MC4(opt)
AC connection	Connector	Connector
Display	LCD	LCD
Interfaces: RS232/RF/WiFi/LAN/GPRS	yes / opt / opt / opt / opt	yes / opt / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt
Certificates and Approvals		
CE, IEC62109, G83, VDE0126-1-1, G59, AS4777, AS/NZS 3100, CEI0-21, VDE-AR-N4105, EN50438, CQC		

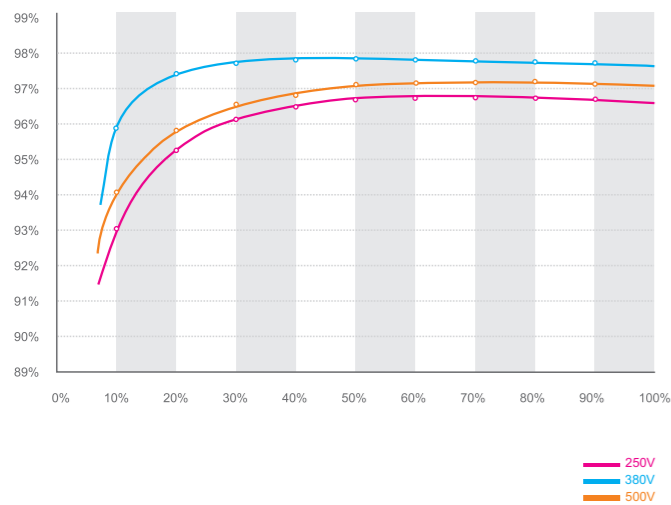
Growatt 3600MTL-S / 4200MTL-S / 5000MTL-S / 5500MTL-S

Leading – edge Technology

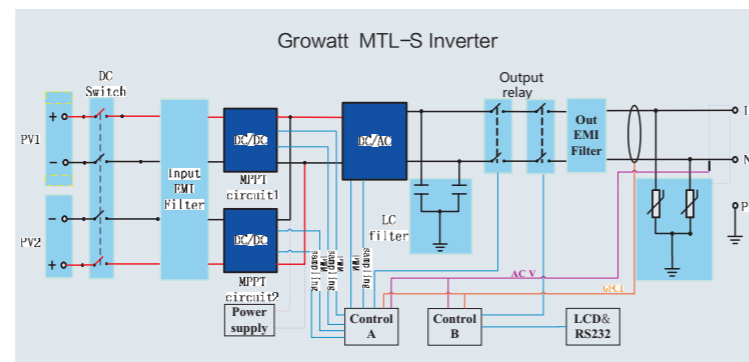
- Double MPPT Tracker, MPPT tracking accuracy more than 99.5%
- Max. Efficiency 97.6%, European Efficiency 97.4%
- Integrated DC switch for added safety protection
- Transformerless design and high power density, offer lighter and more convenient installation
- 5 years standard warranty
- Power factor continuously adjustable
- Flexible communication connection, support RF, WiFi, LAN
- Comply with European, Asia-Pacific safety regulations



Growatt 5500MTL-S efficiency



Growatt 3.6–5.5k MTL-S topology



Datasheet	Growatt 3600MTL-S	Growatt 4200MTL-S	Growatt 5000MTL-S	Growatt 5500MTL-S
Input Data				
Max. DC power	4100W	4800W	5300W	5750W
Max. DC voltage	550V	550V	550V	550V
Start voltage	100V	100V	100V	100V
PV voltage range	70V–550V	70V–550V	70V–550V	70V–550V
MPPT work voltage range / nominal voltage	80V–550V/360V	80V–550V/360V	80V–550V/360V	80V–550V/360V
Full load dc voltage range	190V–500V	150V–500V	160V–500V	175V–500V
Number of MPP trackers /strings per MPP tracker	2 / 1	2 / 1	2 / 1	2 / 1
Max. input current of tracker A /tracker B	10A / 10A	15A / 15A	15A / 15A	15A / 15A
Max. input current per string of tracker A/tracker B	10A / 10A	15A / 15A	15A / 15A	15A / 15A
Output (AC)				
Rated AC output power	3600W	4200W	4600W	5000W
Max. AC power	3600VA	4200VA	4600VA	5000VA
Max. output current	16.3A	19A	20.9A	22.7A
AC nominal voltage; range	220V/230V/240V; 180Vac – 280Vac	220V/230V/240V; 180Vac – 280Vac	220V/230V/240V; 180Vac – 280Vac	220V/230V/240V; 180Vac – 280Vac
AC grid frequency; range	50, 60Hz ; ± 5Hz	50, 60Hz ; ± 5Hz	50, 60Hz ; ± 5Hz	50, 60Hz ; ± 5Hz
Power factor	1	1	1	1
THDI	<3%	<3%	<3%	<3%
AC connection	Single phase	Single phase	Single phase	Single phase
Efficiency				
Max. efficiency	97.9%	97.9%	97.9%	97.9%
Euro-eta	97.4%	97.4%	97.4%	97.4%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch for each MPPT	yes	yes	yes	yes
Output over current protection	yes	yes	yes	yes
Output overvoltage protection –varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated all-pole sensitive leakage current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D)	355/419/138 mm	355/419/138 mm	355/374/158 mm	355/374/158 mm
Weight	14kg	14kg	14.5kg	14.5kg
Operating temperature range	-25 ° C ... +60 ° C with	-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)
Self-Consumption (night)	< 0.5W	< 0.5W	< 0.5W	< 0.5W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Natural	Natural	Natural	Natural
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	100%	100%	100%	100%
Features				
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Connector	Connector	Connector	Connector
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/RF/WiFi/LAN/GPRS	yes / opt / opt / opt / opt	yes / opt / opt / opt / opt	yes / opt / opt / opt / opt	yes / opt / opt / opt / opt
Warranty: 5 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt
Certificates and Approvals				

CE, IEC62109, G83, VDE0126-1-1, G59, AS4777, AS/NZS 3100, CEI0-21, VDE-AR-N4105, EN50438, CQC

B/Three Phase Inverter

15/ Growatt 10000UE / 12000UE / 18000UE / 20000UE

17/ Growatt 30000TL3-S / 33000TL3-S / 40000TL3-S



Growatt 10000UE /12000UE /18000UE /20000UE

Leading – edge Technology

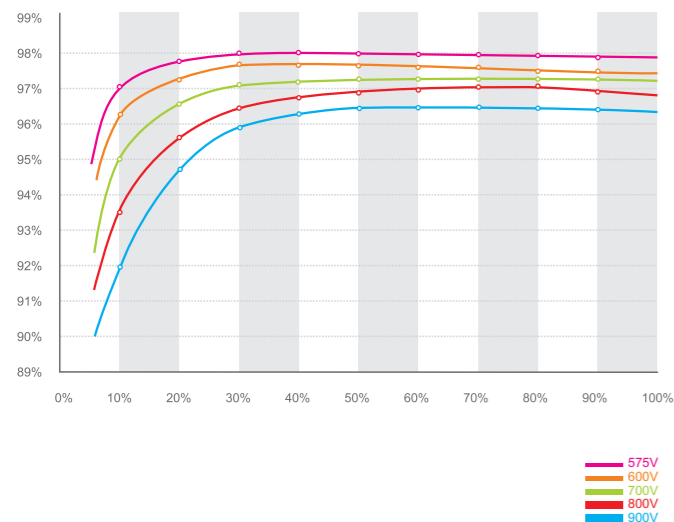
- DC input voltage up to 1000V
- Maximum efficiency of 98%
- Internal DC switch
- Transformerless
- Compact design
- Multi MPP controller
- MTL – String
- Ethernet / RF technology / WiFi
- Sound control
- Easy installation
- Comprehensive Growatt warranty program

Europe / Australia ENS

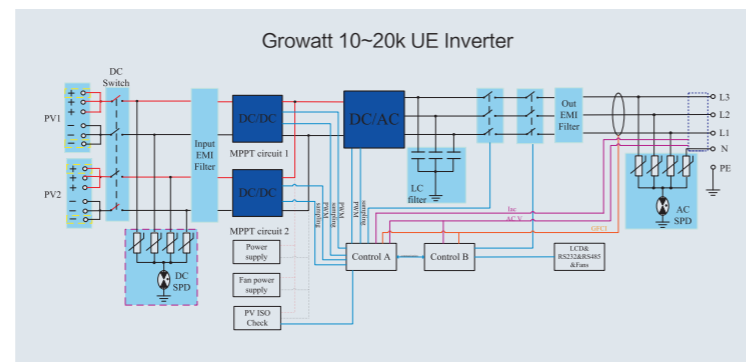
- Simple national setting of line supply monitoring(ENS)
- Easy country configuration
- Multi – language display
- Currently available for Germany, Austria, France, UK Switzerland, Italy and Spain etc.



Growatt 2000UE efficiency



Growatt 10–20k UE topology



Datasheet	Growatt 10000UE	Growatt 12000UE	Growatt 18000UE	Growatt 20000UE
Input Data				
Max. DC power	11000W	13200W	19800W	22000W
Max DC voltage	1000V	1000V	1000V	1000V
Start Voltage	350V	350V	350V	350V
PV voltage range	180V – 1000V	180V – 1000V	180V – 1000V	180V – 1000V
MPP voltage range / nominal voltage	300V – 1000V / 600V	300V – 1000V / 600V	300V – 1000V / 600V	300V – 1000V / 600V
Full load DC voltage range	400V – 800V	400V – 800V	400V – 800V	400V – 800V
Number of MPP trackers/ strings per MPP tracker	2/2	2/2	2/3	2/3
Max. input current	15A / 15A	17A / 17A	23A / 23A	26A / 26A
Max. input current per string	20A	20A	20A	20A
Output (AC)				
Rated AC output power	10KW	12KW	18KW	20KW
Max. AC apparent power	10KVA	12KVA	18KVA	20KVA
Max. output current	16A	19A	28.6A	32A
AC nominal voltage; range	230V/400V 184 – 275V	230V/400V 184 – 275V	230V/400V 184 – 275V	230V/400V 184 – 275V
AC grid frequency; range	50–60Hz; 44–55Hz/54–65Hz	50–60Hz; 44–55Hz/54–65Hz	50–60Hz; 44–55Hz/54–65Hz	50–60Hz; 44–55Hz/54–65Hz
Power factor at rated power	1	1	1	1
Displacement power factor configurable	0–0.8leading – 0.8lagging	0–0.8leading – 0.8lagging	0–1leading –0–1lagging	0–1leading – 0–1lagging
THDI	<3%	<3%	<3%	<3%
AC connection	3/N/PE, 3W+PE(Opt)	3/N/PE, 3W+PE(Opt)	3/N/PE, 3W+PE(Opt)	3/N/PE 3W+PE(Opt)
Efficiency				
Max. efficiency	98%	98%	98%	98%
Euro – eta	97.5%	97.5%	97.5%	97.5%
MPPT efficiency	99.5%	99.5%	99.5%	99.5%
Protection Devices				
DC reverse polarity protection	yes	yes	yes	yes
DC switch for each MPPT	yes	yes	yes	yes
Output AC overcurrent protection	yes	yes	yes	yes
Output AC overvoltage protection – varistor	yes	yes	yes	yes
Ground fault monitoring	yes	yes	yes	yes
Grid monitoring	yes	yes	yes	yes
Integrated residual current monitoring unit	yes	yes	yes	yes
General Data				
Dimensions (W / H / D)	490/740/235 mm	490/740/235 mm	570/740/235 mm	570/740/235 mm
Weight	41kg	41kg	60kg	60kg
Operating temperature range	–25 ° C ... +60 ° C (with derating above45° C)	–25 ° C ... +60 ° C (with derating above45° C)	–25 ° C ... +60 ° C (with derating above45° C)	–25 ° C ... +60 ° C (with derating above45° C)
Noise emission (typical)	≤ 55 dB(A)	≤ 55 dB(A)	≤ 55 dB(A)	≤ 55 dB(A)
Self-Consumption (night)	<0.5W	<0.5W	<0.5W	<0.5W
Standby consumption	12W	12W	12W	12W
Topology	Transformerless	Transformerless	Transformerless	Transformerless
Cooling concept	Smart cooling	Smart cooling	Smart cooling	Smart cooling
Environmental Protection Rating	IP 65	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0–100%	0–100%	0–100%	0–100%
Features				
DC connection	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)	H4/MC4(opt)
AC connection	Screw terminal	Screw terminal	Screw terminal	Screw terminal
Display	LCD	LCD	LCD	LCD
Interfaces: RS232/R485/LAN/RF/WIFI/GPRS	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 years / 10 years	yes / opt	yes / opt	yes / opt	yes / opt
Certificates and Approvals				
VDE-AR-N4105, CEI 0–21, CEI 0–16, CE, VDE 0126–1–1, IEC 62109, RD 1663, G59, C-tick, AS4777, AS/NZS 3100, IEC61727, IEC62116, BDEW(For 18–20k), IEC 61683, NRS 097–2–1, PEA, MEA, G59, EN50438				

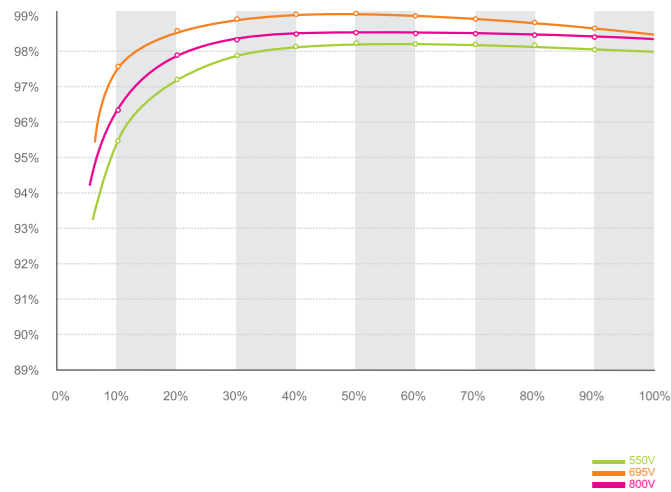
Growatt 30000TL3-S / 33000TL3-S / 40000TL3-S

Leading – edge Technology

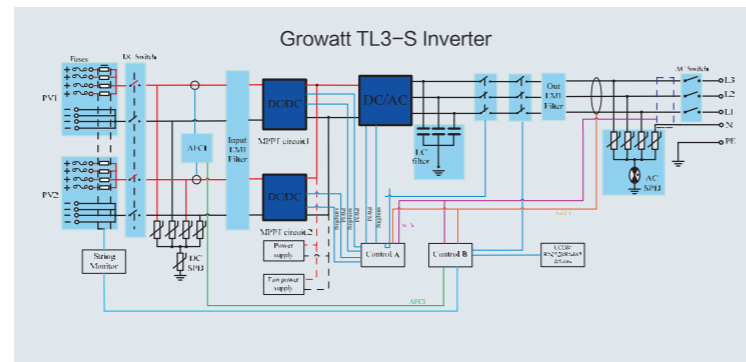
- Maximum efficiency of 99%
- Compact design
- Sound control
- Multi MPP controller
- MTL string
- Interanal DC switch
- Optional AC switch
- Transformerless
- Smart string monitoring and Fuse protection
- Supporting AC power supply
- Easy installation
- Comprehensive warranty program
- Built-in PID modular, AFCI modular is optional



Growatt 40000TL3-S efficiency



Growatt 30-40k-S TL3-S topology



Datasheet

	Growatt 30000TL3-S	Growatt 33000TL3-S	Growatt 40000TL3-S
Input Data			
Max. DC power	37500W	41250W	50000W
Max DC voltage	1000V	1000V	1000V
Start Voltage	250V	250V	250V
PV voltage range	200V – 1000V	200V – 1000V	200V – 1000V
Nominal voltage	580V	580V	695V
Full load MPP voltage range	450V – 800V	450V – 800V	550V – 800V
Max. input current	34A / 34A	38A / 38A	38A / 38A
Max. input current per string	12A	12A	12A
Number of MPP trackers/ strings per MPP tracker	2/4	2/4	2/4

Output (AC)			
Rated AC output power	30KW	33KW	40KW
Max. AC apparent power	33KVA	33KVA	40KVA
Max. output current	44A	48A	48A
AC nominal voltage;range	230V/400V;184-275V	230V/400V;184-275V	277V/480V;245-305V
AC grid frequency	50/60Hz	50/60Hz	50/60Hz
Power factor	0.8 leading – 0.8 lagging	0.8 leading – 0.8 lagging	0.8 leading – 0.8 lagging
THDi @Full load&Thdv<1%	<3%	<3%	<3%
AC grid connection type	3W+N+PE	3W+N+PE	3W+PE

Efficiency			
Max. efficiency	98.9%	98.9%	99%
Euro – eta	98.4%	98.4%	98.5%
MPPT efficiency	99.5%	99.5%	99.5%

Protection Devices			
DC reverse polarity protection	yes	yes	yes
DC switch for each MPPT	yes	yes	yes
AC Switch	opt	opt	opt
DC Surge protection	Class II	Class II	Class II
Ground fault monitoring	yes	yes	yes
Output short circuit protection	yes	yes	yes
AC Surge protection	Class II	Class II	Class II
String Fuse protection	yes	yes	yes
String fault monitoring	yes	yes	yes
Anti-PID protection	yes	yes	yes
AFCI protection	opt	opt	opt

General Data			
Dimensions (W / H / D)	470/754/270 mm	470/754/270 mm	470/754/270 mm
Weight	48kg	48kg	48kg
Operating temperature range	-25 ° C ... +60 ° C (with derating above45° C)	-25 ° C ... +60 ° C (with derating above45° C)	-25 ° C ... +60 ° C (with derating above45° C)
Noise emission (typical)	≤ 50 dB(A)	≤ 50 dB(A)	≤ 50 dB(A)
Self-Consumption (night)	<1W	<1W	<1W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	Smart cooling	Smart cooling	Smart cooling
Environmental Protection Rating	IP 65	IP 65	IP 65
Altitude	2000m without derating	2000m without derating	2000m without derating
Relative Humidity	0-100%	0-100%	0-100%

Features			
DC connection	Graphic LCD	Graphic LCD	Graphic LCD
Interfaces: RS232/R485/ LAN/RF/WIFI/GPRS	yes / yes / opt / opt / opt / opt	yes / yes / opt / opt / opt / opt	yes / yes / opt / opt / opt / opt
Warranty:5 years / 10 years	yes / opt	yes / opt	yes / opt

Certificates and Approvals IEC 62109, CE, G59, VDE 0126-1-1, CQC

C / Sistemi di accumulo

21/ Growatt SP1000 / SP2000 / SP3000

23/ Growatt GBLI2701 / GBLI5001



powering tomorrow
Growatt

STATUS

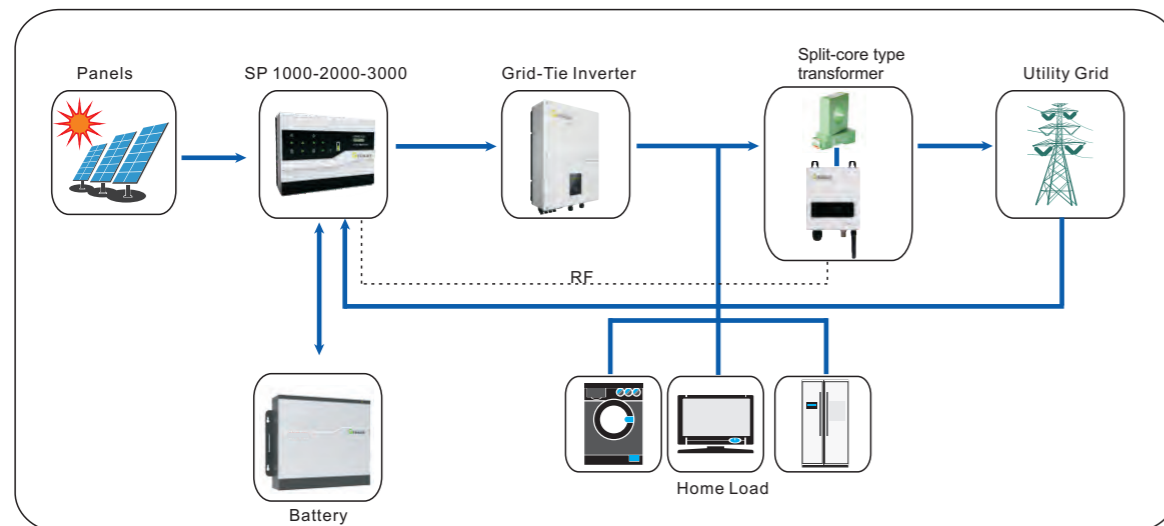
Growatt SP1000 / SP2000 / SP3000

Leading – edge Technology

- Production in daytime and consumption at night
- Internal DC switch
- Capacity of storage can be expanded
- Ethernet / RS232 / RF / WiFi
- Easy to add into Grid-tie installed solar system
- Charging battery via utility grid**
- PV and battery power load simultaneously
- Battery discharging time is programable
- Comprehensive Growatt warranty program



System Application Diagram



Datasheet	Growatt SP 1000	Growatt SP 2000	Growatt SP 3000
PV input data			
Recommended input power range	2000W~4000W	3000W~6000W	3000W~6000W
Max. input current	30A *1	30A *1	30A *1
Input DC voltage range	100V~580VDC	100V~580VDC	100V~580VDC
Technical data of SP 2000			
Max. charging and discharging power	1000W	2000W	3000W
Full load DC voltage range while charging	100V~450VDC	200V~450VDC	200V~450VDC
Output voltage range while discharging	150V~450VDC*2	150V~450VDC*2	150V~500VDC*2
Rated output voltage while discharging	380V	380V	380V
Max. input current (from PV) while charging	10A	10A	15A
Max. output current (to inverter) while discharging	6.7A	10A	15A
Rated output current (to inverter) while discharging	2.7A	5.3A	4A per string
Number of MPP trackers/strings per MPP tracker	1/3	1/3	2/2
Output strings(to inverter)	2	2	2
Max AC charging power	-	-	1000W
Battery data			
Battery type	Lead-acid / Lithium	Lead-acid / Lithium	Lead-acid / Lithium
Recommend battery capacity range	50~100AH	90~200AH	150~600AH
Daily total electricity supply	2~5 kWh	2~9 kWh	3~12 kWh
Deep of discharge	50% DOD / 80% DOD	50% DOD / 80% DOD	50% DOD / 80% DOD
Battery voltage range	46V~58VDC	46V~58VDC	46V~58VDC
Max charging voltage	58VDC / 57VDC	58VDC / 57VDC	58VDC / 57VDC
Max charging current	≤23A	≤45A	≤66A
Max discharging current	≤23A	≤45A	≤66A
Protection devices			
Over voltage protection	Yes	Yes	Yes
Low voltage protection	Yes	Yes	Yes
Over current protection	Yes	Yes	Yes
Over load protection	Yes	Yes	Yes
Output current short protection	Yes	Yes	Yes
DC reverse polarity protection	Yes	Yes	Yes
Others			
Maximum efficiency	94.0%	94.0%	94.5%
Dimensions(W/H/D)	482/355/166mm	482/355/166mm	470/100/175mm
Weight	13.2 kg	13.2 kg	15 kg
Input grid voltage range (single phase)	230Vac± 15%	230Vac± 15%	230V/240V AC
Operating temperature range	0 ° C~+40 ° C	0 ° C~+40 ° C	0 ° C~+40 ° C
Altitude	2000m	2000m	2000m
Cooling concept	Natural	Natural	Natural
Environmental protection rating	IP20 (indoor used)	IP20 (indoor used)	IP20 (indoor used)
Noise emission (typical)	≤25dB	≤25dB	≤25dB
DC connection	H4/MC4 (opt)	H4/MC4 (opt)	H4/MC4 (opt)
Battery connection	Screw terminal	Screw terminal	Screw terminal
Display	LED+LCD	LED+LCD	LED+LCD
Interfaces: RS232 / Ethernet / Wi-Fi	Yes / opt / opt	Yes / opt / opt	Yes / opt / opt
Warranty	5 years	5 years	5 years
Certificates and approvals	CE	CE	CE

Note: *1 Current from PV array, not only to SP, but also to PV inverter. *2 Default setting 450VDC, can be adjustable to 500VDC.

Note: *1 Current from PV array, not only to SP, but also to PV inverter.
 *2 Default setting 450VDC, can be adjustable to 500VDC.
 ** It will be available in the near future

Growatt GBLI 2701 / GBLI 5001

Lithium Battery Product



Customer friendly design

- Wall-mounted design, saving installation space
- High energy density, low installation cost
- Wide temperature range and long storage period acceptable

Best battery for Residential solar storage system

- Larger DOD to maximize usage of battery capacity
- Long cycle life to ensure lowest cost per Wh.
- Excellent quality cell along with experienced BMS design team to mostly ensure the safety while operating
- Intelligent over voltage/current/temperature protection, LED to indicate status realtimely.

Datasheet	Growatt GBLI 2701	Growatt GBLI 5001
Nominal parameters		
Voltage	51.1V	51.1V
Capacity	53Ah	95.4Ah
Energy	2708Wh	4875Wh
Electrical parameters		
Operating voltage	46~57 V	46~57 V
Maximum charge voltage	57 V	57 V
Maximum discharge current	23 A	45 A
Maximum charge current	23 A	45 A
Communication parameters		
Network interface	RS485(RJ45)	RS485(RJ45)
Communication protocols	MODBUS	MODBUS
Structural parameters		
Width	580 mm	800 mm
Height	580 mm	610 mm
Depth	137 mm	167 mm
Weight	30 kg	46.5 kg
Other parameters		
Life (25°C)	10 years	10 years
Life cycles (80% DOD, 25°C)	≥5000	≥5000
Maintenance	Free in quality guarantee period	Free in quality guarantee period
Storage time (-20°C~35°C)	3 months power off	3 months power off
Operation temperature	-10°C~45°C	-10°C~45°C
Storage temperature	-40°C~60°C	-40°C~60°C
Transport standard	UN 38.3	UN 38.3
EMC standard	IEC 61000	IEC 61000
Warranty	5 years	5 years

D/Monitoring System

27/ ShineVision

29/ ShineWiFi

31/ ShineGPRS / Shine3G

33/ ShineWebBox

35/ ShineServer

37/ ShinePhone



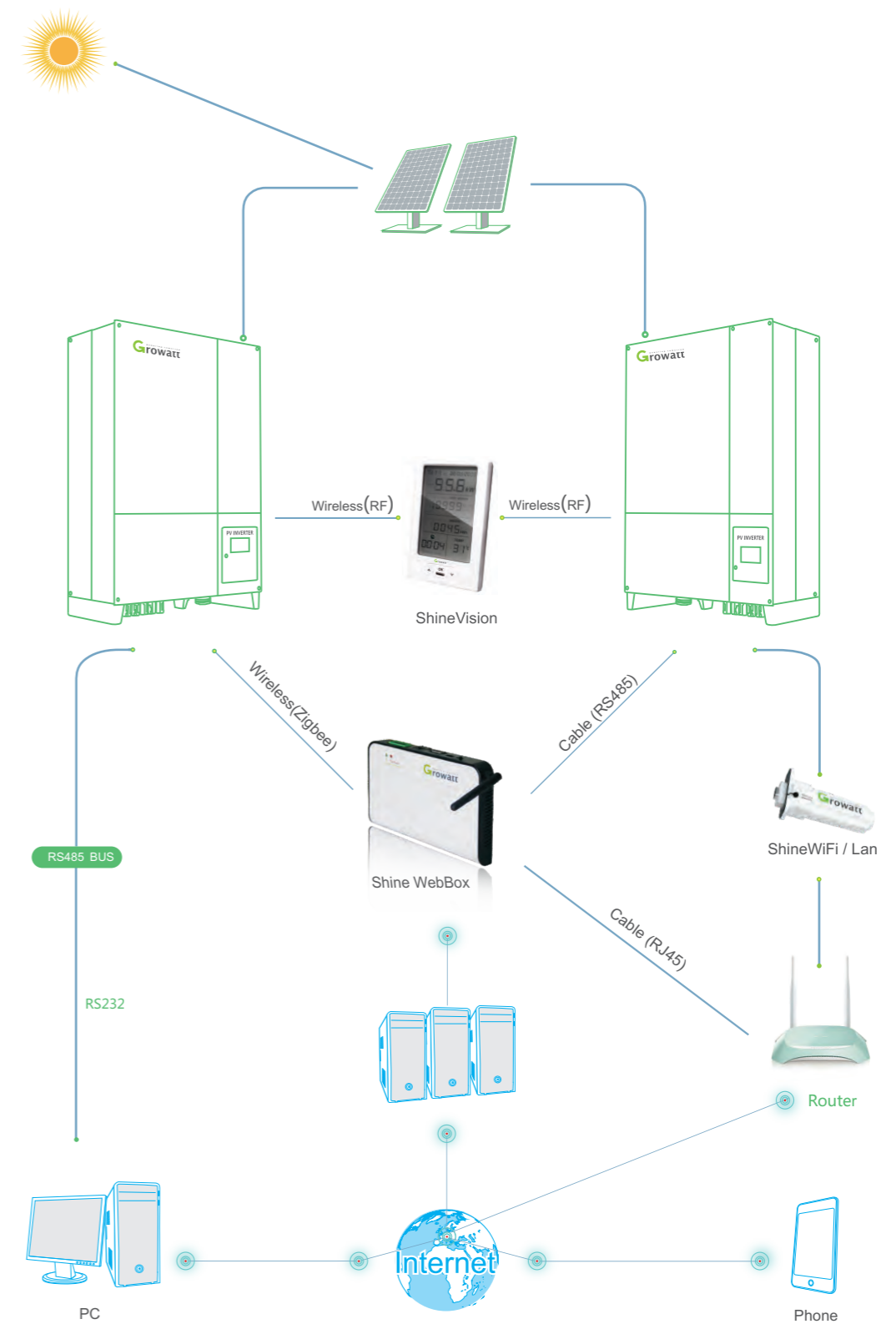


Growatt Monitoring system

Growatt monitoring system provide you the perfect solution for every application, regardless whether you want to monitor the yield of a home roof system or of a solar power station.

Through the powerful back-ups from our hardware and software, various communication protocols and interfaces, our customers can simply manage the portfolis of different systems-- from residential to commercial roof to utility scale--from any location of the world.

With our web-enabled platform, you won't miss any change.





Datasheet	ShineVision
Communication	
Inverter communication	Wireless radio frequency
Number of inverters	Max.6 units
Communication range	
Partition communication	Max.30m
Power supply	
Power adapter	Input : 100-240V, 50/60Hz AC Output: 5V/0.1A AC
Type of battery	Number 5 AA alkaline battery
Environmental conditions for operation	
Emitter temperature	-10°C ~ 60°C
Monitor temperature	-10 °C ~ 50°C
Humidity range	≤80%
Protection rating	IP20
General Data	
Dimensions (W / H / D)	217/150/72 mm
Weight	0.82kg
Installation site	Indoor
Deployment options	Desktop device
Language versions	English
Features	
Display	LCD display
Operation	key-press
Warranty	12 months
Information displayed	
General Information	Time, date, temperature
System Data	AC voltage, PV voltage, daily yield, monthly yield, total yield, etc.

ShineVision

The all-in-one wireless monitoring package for home

Informative, cute, and easy to operate, the ShineVision with Radio Frequency not only has sexy design, but also provides an innovative monitoring solution. Key data is visible on its display, including daily, monthly, total power yield and income, DC and AC voltage, energy yield in Euros, US dollars and Pounds, temperature, time, as well as insolation levels, which can be accessed just like a mobile phone. It can update and store the latest data permanently. ShineVision also can be set up to emit an audio signal to tell operators of system errors automatically.

Features

- RF communication for wireless operation
- Automatic monitoring of up to six inverters simultaneously, applicable for small home system
- Simple installation. It can be placed anywhere indoor with signal coverage
- Easy-to-understand data display by simple key operation: real-time power, three-phase AC voltage, PV voltage, daily, monthly and total power yield and income, temperature, light intensity, the date and time
- Data archiving automatically and permanently with high security
- Audio alarm in the event of errors
- Low power consumption, powered by adaptor or battery



Datasheet

ShineWiFi

General Data

Dimensions(Length/Width/Height)	135/79/29 mm
Weight	63g
Software language	English, Chinese
Language of the manual	English, Chinese

Wireless Parameters

Certification	FCC/CE
Wireless type	WiFi
Wireless standard	802.11 b/g/n
Frequency range	2.412GHz ~ 2.484GHz
Antenna gain	2.5 dBi
Transmit power	802.11b: +20dBm(Max.) 802.11g: +18dBm(Max.) 802.11n: +15dBm(Max.)
Receiver sensitivity	802.11b: -89dBm(Max.) 802.11g: -81dBm(Max.) 802.11n: -71dBm(Max.)

Hardware Parameters

Data interface	UART: 9600bps Ethernet: 100Mbps
Operating voltage	9V(+/-15%)
Operating current	100mA ~ 300mA
Operating temperature	-25°C ~ +55°C
Storage temperature	-30°C ~ +60°C
Network type	AP(Access Point) Mode; Station Mode(with Soft AP)

Software Parameters

Security mechanisms	WEP/WPA-PSK/WPA2-PSK/WAPI
Encryption	WEP64/WEP128/TKIP/AES
WLAN default IP	192.168.10.100

Application Parameters

Supported servers	ShineServer
Inverter communication	RS232(Modbus RTU protocol)
Server communication	WiFi via router(Modbus TCP protocol)
Supported routers	Wireless router(Include 3G router)
User configuration interface	Integrated web server(Internet browser)
Max.communication range	100m
Data transfer interval	5 Minutes
Default server URL	server.growatt.com

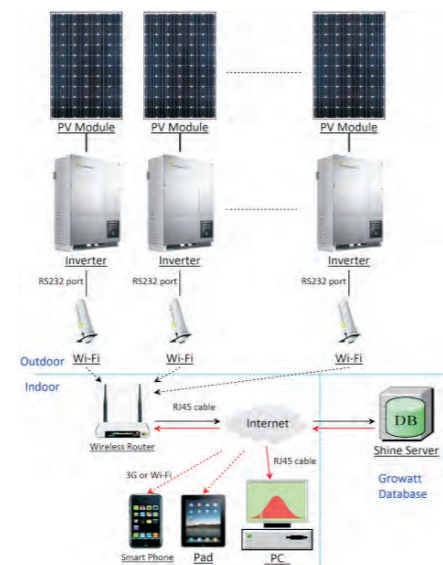
Others

Warranty	1 year
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ShineWiFi

Newly recommended for house-owners

- Easy to use
- Plug-and-play commissioning
- 100-meter wireless connection to inverter
- Remote firmware updating for inverter
- Free online monitoring via Shine Server





ShineGPRS / Shine3G

Features

- Plug-and-play, easy use, cable-free
- 2G,3G network monitoring, suitable for rural area
- Remote inverter firmware upgrading
- Cloud server for data storage
- Web browser or mobile APP viewing
- Build-in storage and clock supporting local storage and uploading

Datasheet	ShineGPRS	Shine3G
General Data		
Dimensions(Length/Width/Height)	135/79/29 mm	135/79/29 mm
Weight	70g	70g
Language	English, Chinese	English, Chinese
Language of the manual	English, Chinese	English, Chinese
Wireless Parameters		
certificate and approvals	CE	FCC/CE
network type	2G GSM(GPRS)	GSM/GPRS/EDGE/UMTS/HSDPA
GSM/GPRS/EDGE frequency range	850/900/1800/1900MHZ	850/900/1800/1900MHZ
UMTS/HSDPA frequency range	NA	900/2100MHZ
Antena gain	3dBi	3dBi
max output power	GSM850/GSM900: 2W DCS1800/PCS1900: 1W	UMTS850/1900: 0.25W UMTS900/2100: 0.25W GSM850/GSM900: 2W DCS1800/PCS1900: 1W
speed	GPRS -Max.85.6Kbps(DL),MAX.42.8Kbps(UL)	HSDPA -Max.3.6Mbps WCDMA -Max.384Kbps(DL),Max.384Kbps(UL) EDGE Class -Max.236.8Kbps(DL),Max.118Kbps(UL) GPRS -Max.85.6Kbps(DL),MAX.42.8Kbps(UL) CSD -GSM data rate 14.4Kbps -WCDMA data rate 57.6Kbps -WCDMA 64Kbps CSD for Video call
Hardware Parameters		
serial port speed	9600bps	9600bps
operating voltage	9V (±5%)	9V (±5%)
operating current	1.5A	1.5A
operating temperature	-25°C ~ +55°C	-25°C ~ +55°C
storage temperature	-30°C ~ +60°C	-30°C ~ +60°C
Application Parameters		
server	ShineServer	ShineServer
communication with inverter	RS232(Modbus RTU protocol)	RS232(Modbus RTU protocol)
communication with server	TCP(Modbus TCP protocol)	TCP(Modbus TCP protocol)
network supported	2G GSM(GPRS)	2G GSM、 3G WCDMA
configuration interface	APP	APP
SIM type	regular SIM card	regular SIM card
uploading interval	5 Mins(1-15 adjustable)	5 Mins(1-15 adjustable)
Default server URL	server.growatt.com	server.growatt.com



Datasheet	ShineWebBox
Communication	
Communication with inverters	RS485 (Wire connection) ZigBee (Wireless connection)
Communication with PC	10/100 Mbit Ethernet
Communication range	RS485: 1200m ZigBee: 300m (without obstacle) Ethernet: 100m
Electrical Data	
Power adapter	Input: 100~240V,50/60Hz AC Output: 5V,2A DC
Power consumption	2.5W
Environmental Conditions	
Ambient temperature	0 - 45°C
Relative air humidity	5%-95%
General Data	
Dimensions(W/H/D)	185/125/30 mm
Net weight	0.42kg
Mounting location	Indoor
Mounting type	Wall mounting , tabletop device
Status indicator	LED
Language	English
Data update frequency	5 minutes

ShineWebBox

The all-in-one wireless monitoring package for home

It is a cost-effective and compact monitoring device, specially designed for solar power plant. Using stable Linux operating system with high-speed CPU, smartly record your system features. Provide local data storage, wireless and easy TCP/IP configuration, and present plant data over Internet.

Features

- A multi-functional and high-performance communication data logger
- Keep user informed of the system' s status at any time
- Massive storage with flexible parameters setting, system information management, reactive power control, error prompt and record
- Remote monitoring and maintenance for medium and large solar power plants
- Flexible display, evaluation and rapid detection of any change
- Collects data and uploads information over the internet in near real-time to Growatt Shine Server platform



ShineServer

Whether for residential system or commercial system, even for PV power station, Growatt could deliver a satisfactory monitoring solution based on Shine Server, which acts as a reliable, powerful and secure web-enabled platform. With flexible and sophisticated design, Shine Server provides highly interactive and immediate access to key system data at any time and any place. Special views are enabled accounting for the different requirements of different applicants and target groups. The powerful analysis and reporting functions help owners and operators to improve the productivity of PV plant and the efficiency of operations.

Features

- Ease of operation and maintenance
- Quick overview of all PV plant status
- Monitor and record several of PV plants with centralized management
- Professional analysis function to help maximize the system performance
- Real-time access to key performance worldwide via PC or mobile phones

Datasheet

ShineServer

Languages

Available languages	English, Chinese, French, Japanese
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System requirements

Supported operating systems	All
Recommended browsers	Internet Explorer as of version 8, Firefox as of version 5, Google Chrome as of version 14, Safari as of version 5, Opera as of version 11
Supported data logger	Shine WebBox, ShineWiFi, ShineLAN, ShinePhone

Access

Website	http://server.growatt.com
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Plant information

Plant overview	Quick yield overview of all your PV plants
Specified plant	All important data at a glance including energy output, yield gains, environmental status
Plant installation data	Summary of all plant information which contains installation data, location data and income data
Device overview	Display of all important data about data logger, inverters, environment monitor, smart meter and other key devices
Time periods	5 mins

Plant management

Account	User could manage all PV plants with one same account
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Monitoring

Inverter status	All inverter running status are recorded automatically. The warning of fault is highlighted and immediate.
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Status reporting

Event reports	Timely e-mail reports on system fault and plant error.
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Background operating

Plant management	Add new plant, edit and delete existed plant
Device management	Intuitive operation to manage all devices
Inverter setting	simple parameter setting for inverters including power management



Datasheet

ShinePhone

General Data

Available languages	English, Chinese, Japanese, Dutch, Hungarian, Italian
Supported operating systems	Android / iOS
Source of data	server · growatt · com

Plant information

Plant overview	Quick yield overview of all your PV plants
Specified plant	All important data at a glance including energy output, yield gains, current power
Plant installation data	Summary of all plant information which contains installation data, location data and income data
Device overview	Display of all important data about inverters, environment monitor, and electric meter
Plant event log	Display of all the warning events of the plant

Device information

Inverter data	All inverter running status and data could be obtained at any time
Environment monitor data	Key parameters about environment could be obtained
Electric meter data	Primary parameters at the point of connection are collected in every measured period

ShinePhone

Download [Shine Phone](#)



Residential String Inverter Project List



Ballarat Hospital

Location	Project Volume	Model Used
Australia	50KW	Growatt 5000MTL



Tennis Club

Location	Project Volume	Model Used
Hungary	35KW	Growatt 10000UE



Capalaba Warehouse

Location	Project Volume	Model Used
Australia	30KW	Sungold 5000



Jenny's House Plant

Location	Project Volume	Model Used
Australia	30KW	Sungold 5000



Bayswater Playgroud

Location	Project Volume	Model Used
Australia	20KW	Sungold 5000



200MW Household solar systems with thin film panels

Location	Project Volume	Model Used
Guangdong,Sichuan,Jiangsu	Qty 10000	Growatt 2000-5000HF



Solar Poverty Alleviation Project in Anhui

Location	Project Volume	Model Used
Jinzhai,Anhui	Qty 2500	Growatt 3000



Household solar systems in Jiangxi

Location	Project Volume	Model Used
Jiangxi	Qty 600	Growatt 3000

Commercial String Inverter Project List



EA Phitsanulok 134MW Soalr Farm

Location	Project Volume	Model Used
Phitsanulok, Thailand	134MW	Growatt 16700TL3-HE



China Southern Grid 52MW solar plant

Location	Project Volume	Model Used
Zhongshan, China	52MW	Growatt 40000TL3



20MW,Wuhan,Kunshan

Location	Project Volume	Model Used
Wuhan,Kunshan	20MW	Growatt 20000UE



RUIHAI New Energy 20MW solar plant

Location	Project Volume	Model Used
Shenzhen, China	20MW	Growatt 20000TL3-HE



Growatt Zhejiang 10MW solar plant

Location	Project Volume	Model Used
Zhejiang, China	10MW	Growatt 20000TL3-HE



National Grid 8.5MW solar plant

Location	Project Volume	Model Used
Tulufan, China	8.5MW	Growatt 18000UE



LEZHI New Energy 7MW solar plant

Location	Project Volume	Model Used
Suzhou, China	7MW	Growatt 20000TL3-HE



Gaochuangte New Energy 6MW solar plant

Location	Project Volume	Model Used
Suzhou, China	6MW	Growatt 18000UE

Commercial String Inverter Project List



BPCC Beijing 10MW solar plant

Location	Project Volume	Model Used
Baoding, China	10MW	Growatt 20000TL3-HE



Upgrade Energy 4MW solar plant

Location	Project Volume	Model Used
Gent, Belgium	4MW	Growatt 20000UE



Suntension Gmbh 4.4MW solar plant

Location	Project Volume	Model Used
Frankfurt, Germany	4.4MW	Growatt 20000UE



Shandong LINUO solar power 9MW solar plant

Location	Project Volume	Model Used
Chifeng, China	9MW	Growatt 10000UE



Bainian Real Estate 3MW solar plant

Location	Project Volume	Model Used
Zhengzhou, China	3MW	Growatt 20000UE



CBI Germany 1.4MW solar plant

Location	Project Volume	Model Used
Domitz, Germany	1.4MW	Growatt 20000UE



TC Renewable Energy 250 kW solar rooftop

Location	Project Volume	Model Used
Sirrach, Thailand	250kW	Growatt 20000UE



Campus Power 250 kW solar rooftop

Location	Project Volume	Model Used
Nakhon Pathom, Thailand	250kW	Growatt 20000UE

Central Inverter Project List



EA Lampang 127MW solar farm

Location	Project Volume	Model Used
Lampang, Thailand	127MW	Growatt CP500 Station



Ghana 20MW solar farm

Location	Project Volume	Model Used
Ghana	20MW	Growatt CP500TL



China Southern Grid 20MW solar farm

Location	Project Volume	Model Used
Foshan, Guangdong, Province	40MW	Growatt CP500TL



SAIC group 40MW solar farm

Location	Project Volume	Model Used
Nanjing, Shanghai	40MW	Growatt CP1000 Station



Inner Mongolia Ulate 20MW solar farm

Location	Project Volume	Model Used
Ulate, Inner Mongolia	20MW	Growatt CP500TL



Xinjiang Yuli 20MW solar farm

Location	Project Volume	Model Used
Yuli County, Xinjiang	20MW	Growatt CP500TL



Hebei Hengshui Economic Zone 14MW plant

Location	Project Volume	Model Used
Hebei, China	14MW	Growatt CP250、Growatt CP500TL



Hubei Wuhan Economic Zone 11.25MW plant

Location	Project Volume	Model Used
Wuhan, China	11.25MW	Growatt CP100、Growatt CP500TL

Service hotline:
 +86 755 2747 1942
 Email: service@ginverter.com
 Business hotline
 +86 755 2747 1900
 Email: info@ginverter.com



Service

Choose Growatt
 Choose golden service
 7 X 24 global on line support

Growatt Photovoltaic Inverter

The cost of PV inverter is just a small proportion of the whole PV system, however the system operation and power generation are completely controlled by the inverter. Growatt PV inverter has been tested by many professional organizations, which is very applicable for residential solar system, as well as power plant.

High Efficiency

On the PV market of developed countries, the national power grid conditions are relatively good. Therefore most of the countries choose more environmentally friendly and efficient multicrystalline silicon solar panel. For such applications, the Growatt transformerless inverters brings more stable and sustainable higher power generation. Growatt inverter can also be applied with parts of the noncrystallosilicon modules and concentrator modules.

Easy Installation

Easy wall mount installation, convenient AC/DC connections. Internal DC switch, automatic detection of grid safety and disconnect settings. By simple adjustment, Growatt inverter can be applied in different countries with different grids and safety standards.

Safe and Reliable

Internal DC switch; AC/DC side safety protection and failure checking; communications by RS485, RS232, WiFi.

Smart Monitoring

Growatt inverters can wirelessly communicated by RF technology, WiFi. Using Mornitoring Server to realize power plant monitoring, system diagnostics and maintenance.

Warranty

All the Growatt inverter has 5 years standard warranty.

