



GOODWE
YOUR SOLAR ENGINE

Power Whenever You Need

Residential Energy Storage Solutions

On & Off-grid Energy Storage Solutions (Newly Installed Systems)

Summary

As a product intended for the new installation of PV storage generators, EM/ES series are aimed for boosting self-consumption in areas with high electrical rate and a relatively low FIT. For areas and regions where peak shaving can be applied and feed-in-power is restricted, this system would be a good fit.

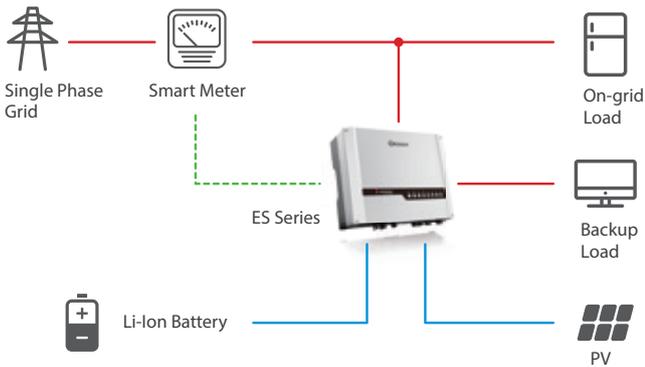
Functional Introduction

- **Increasing Self-Consumption:** During the day, the electricity from the PV array is used to optimize self-consumption. The excess is used to recharge the batteries and can be released to the loads at night. The highest proportion of self use is up to 95%.
- **Peak Shaving:** By setting the charging and discharging time, the battery can be charged using the lower electrical rate and discharged to loads when there is a high electrical rate.
- **Power Supply for Important Loads:** Connected to the backup side of the inverter, loads such as refrigerators, routers, lamps, computers and other small appliances can be powered. When grid fails the system automatically switches to back-up mode within milliseconds.

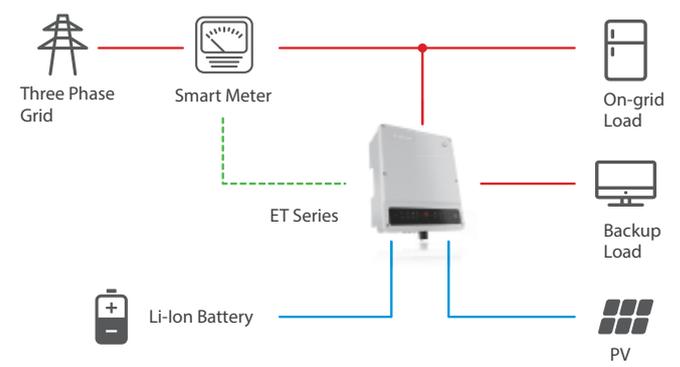
System Topology Illustration

AC cable DC cable COM cable

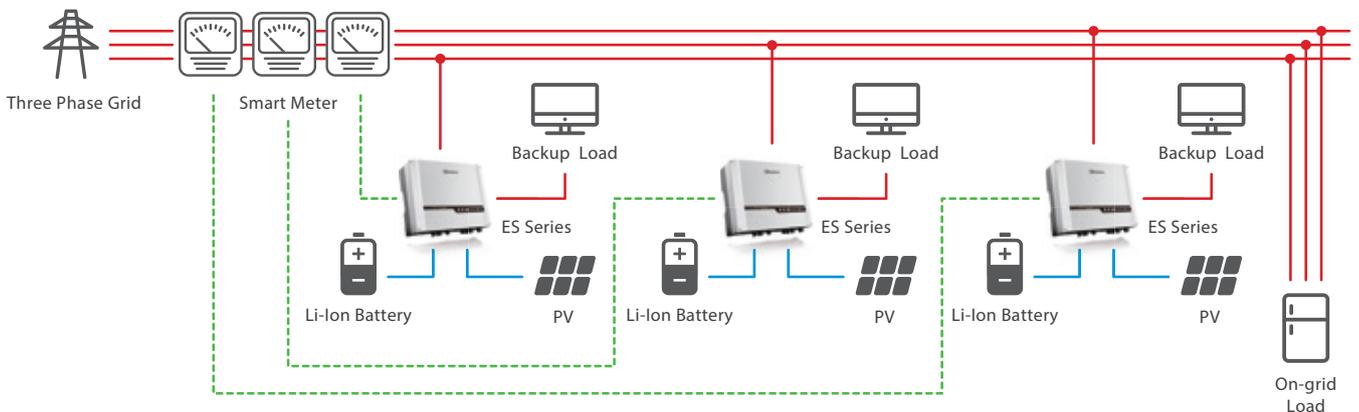
01 Basic Application



02 Basic Application Three Phase



03 Three-phase Application Proposal



Energy Storage Solutions

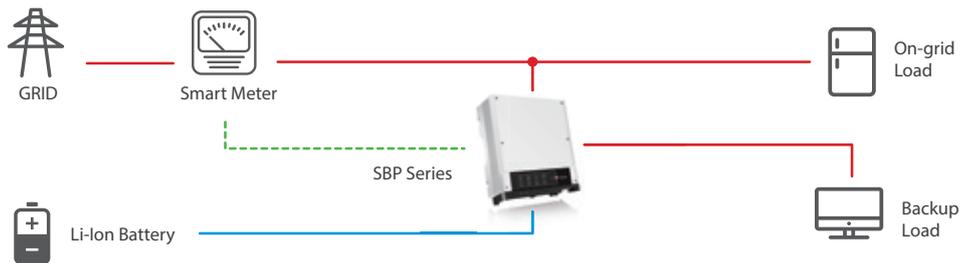
Summary

SBP product series is geared up for areas where there is considerable price gap between peaking and valley period or a limitation in power supply with no allowance for the installation of PV panels.

Functional Introduction

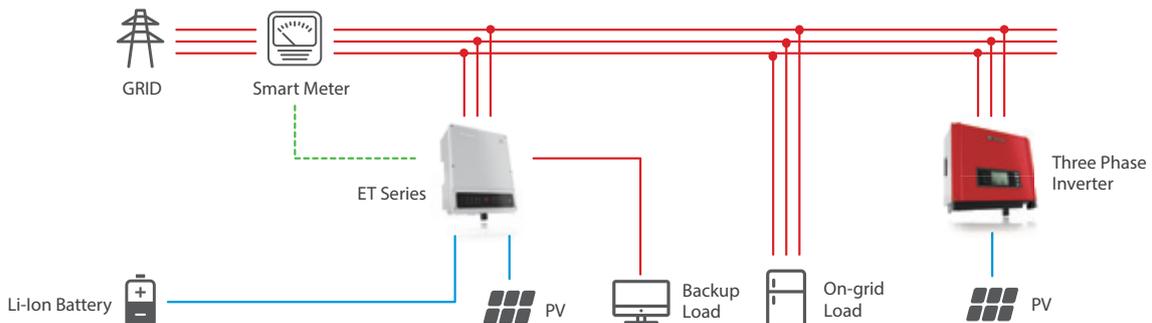
- Peak Shaving: Economic Mode allows you to set the time period on a flexible basis.
- Power Supply for Important Loads: Connected to the backup side of the inverter, loads such as refrigerators, routers, lamps, computers and other small appliances can be powered. When grid fails the system automatically switches to back-up mode within milliseconds.

System Topology Illustration



Extending Storage System Capacity by More Grid-Tied Inverters

Three Phase



ET hybrid system capacity could be extended by connecting with a 3-phase grid-tie solar system, especially for big battery capacity. The ET Series reduce the power loss from PV side by exclusively using the energy from the 3-phase grid-tied solar system (anti-reverse system). Power from grid-tied system may support the loads together with ET hybrid system, while battery charging, before it could feed into grid.

On-grid Retrofitting Storage Solutions Utilizing DC-coupling Approach

Summary

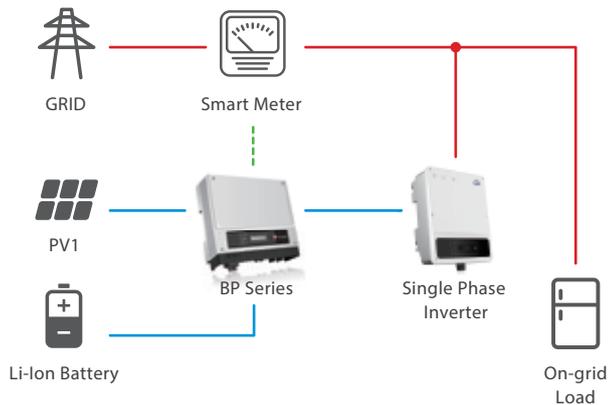
BP series, a product that aims for situations where there is a high electrical bill and a low FIT, is designed for upgrading to DC-coupled storage system based on the existing PV on-grid inverter, helping to reduce your bill by boosting self-consumption.

Functional Introduction

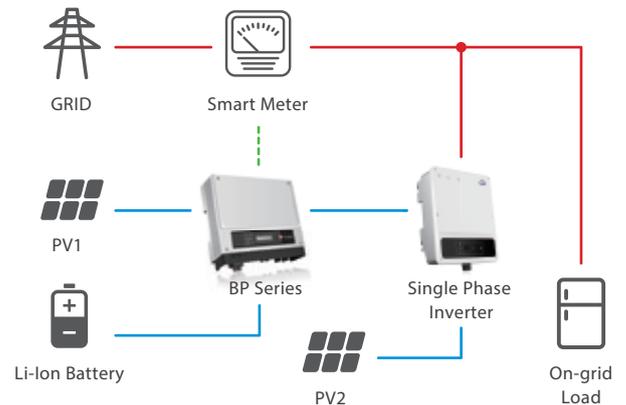
- Boosting Self-Consumption: With the electrical meter in place, it can automatically achieve self-consumption and offer better return on investment.

System Topology Map

01 System Upgrading Design for Single Phase & Single MPPT Inverters



02 System Upgrading Design for Single Phase & Dual MPPT Inverters



On-grid Retrofitting Storage Solutions Utilizing AC-coupling Approach

Summary

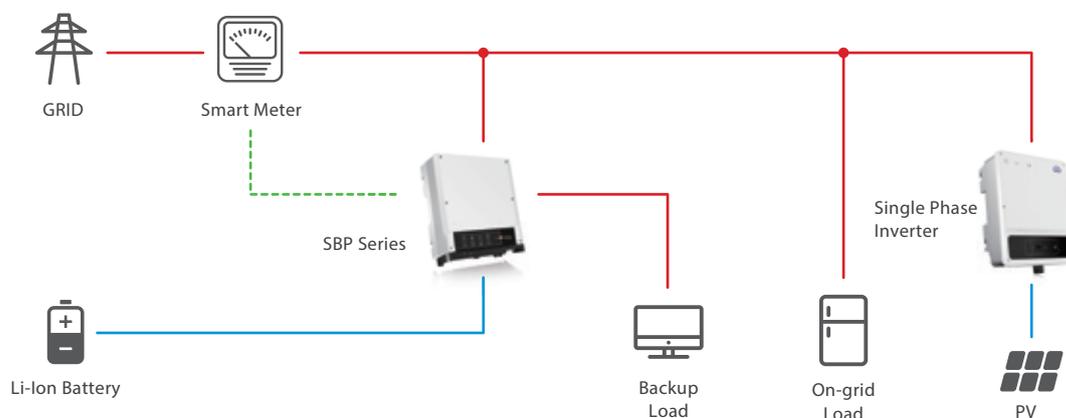
As a product intended for the retrofit of PV storage generators, SBP series is aimed for boosting self-consumption in areas with high electrical rate and a relatively low FIT as well as the availability of peak shaving. Compared with hybrid energy storage inverters, SBP is more cost-effective.

Functional Introduction

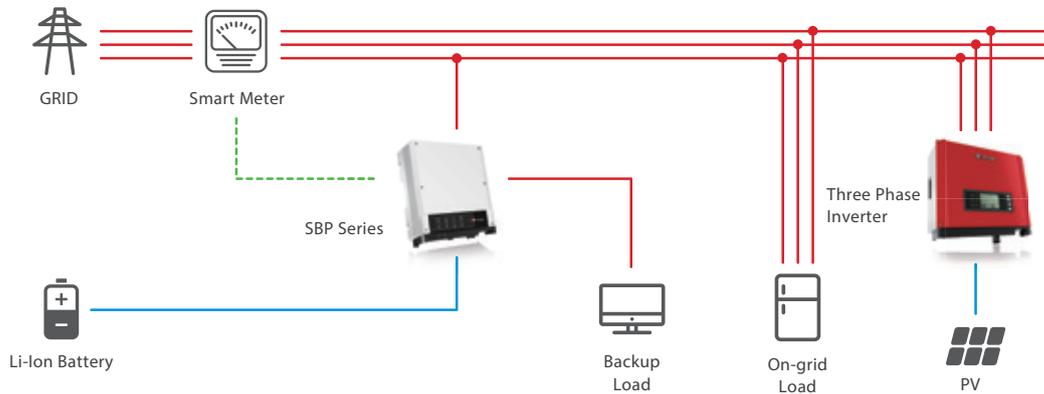
- **Increasing Self-Consumption:** During the day, the electricity from the PV array is used to optimize self-consumption. The excess is used to recharge the batteries and can be released to the loads at night. The highest proportion of self use is up to 95%.
- **Peak Shaving:** By setting the charging and discharging time, the battery can be charged using the lower electrical rate and discharged to loads when there is a high electrical rate.
- **Power Supply for Important Loads:** Connected to the backup side of the inverter, loads such as refrigerators, routers, lamps, computers and other small appliances can be powered. When grid fails the system automatically switches to back-up mode within milliseconds.

System Topology Map

01 System solutions integrating one single phase inverter



02 System solutions for one three phase inverter



Off-grid System Solutions

Summary

ES series is fit for areas like remote villages, powerless areas, ocean islands, and off-grid applications, ensuring household power demand needs are met.

Functional Introduction

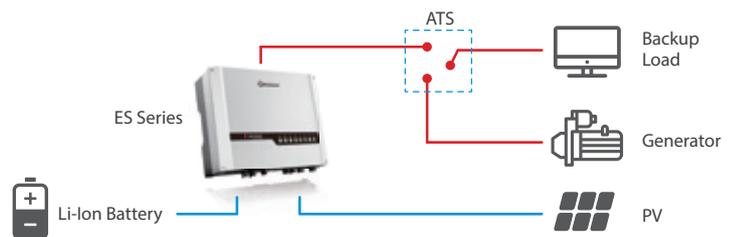
- Meeting power supply demand: the energy output from the PV side will be supplied to the load as a priority before the surplus energy flowed to the battery for charging, which shall be discharged for powering the load when there is no sufficient electrical supply from the PV side.

System Topology Map

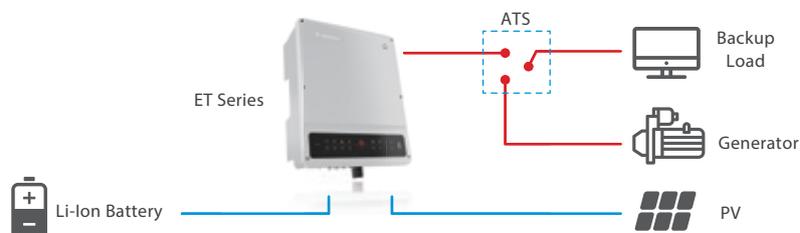
01 No Generator Application Proposal



02 Application Proposal with Generator included



03 Application Proposal with Generator included (Three Phase) Three Phase



In case of insufficient battery & PV supply without public grid, a generator could be adopted automatically or manually switch supply from hybrid back-up side to supply from generator

EH Series

Single Phase Hybrid Inverter (HV Battery)



Technical Data		GW3600-EH	GW5000-EH	GW6000-EH
Battery Input Data*	Battery Type	Li-Ion		
	Battery Voltage Range(V)	85~450		
	Start-up Voltage (V)	90		
	Max. Charging/Discharging Current (A)	25/25		
	Max. Charging/Discharging Power (W)	3600	5000	6000
PV String Input Data	Max. DC Input Power (W)	4800	6650	8000
	Max. DC Input Voltage (V)	580		
	MPPT Range (V)	100~550		
	Start-up Voltage (V)	90		
	Nominal DC Input Voltage (V)	380		
	Max. Input Current (A)	12.5/12.5		
	Max. Short Current (A)	15.2/15.2		
	No. of MPP Trackers	2		
	No. of Strings per MPP Tracker	1		
	AC Output Data (On-grid)	Nominal Apparent Power Output to Utility Grid (VA)	3600	5000
Max. Apparent Power Output to Utility Grid(VA)		3600	5000	6000
Max. Apparent Power from Utility Grid (VA)		7200 (Charging 3.6kw, backup output3.6kw)	10000 (Charging 5kw, backup output 5kw)	12000 (Charging 6kw, backup output 6kw)
Nominal Output Voltage (V)		230		
Nominal Output Frequency (Hz)		50/60		
Max. AC Current Output to Utility Grid (A)		16	21.7	26.1
Max. AC Current From Utility Grid (A)		32	43.4	52.2
Output Power Factor		~1 (Adjustable from 0.8 leading to 0.8 lagging)		
AC Output Data* (Back-up)	Output THDi (@Nominal Output)	<3%		
	Max. Output Apparent Power (VA)(@Linear Load)	3600	5000	6000
	Peak Output Apparent Power (VA)	4320 ,60sec	6000 ,60sec	7200 ,60sec
	Max.Output Current (A)(@Linear Load)	15.7	21.7	26.1
	Nominal Output Voltage (V) (@Linear Load)	230 (±2%)		
	Nominal Output Frequency (Hz)(@Linear Load)	50/60 (±0.2%)		
Efficiency	Output THDv (@Linear Load)	<3%		
	Max. Efficiency	97.6%		
Protection	European Efficiency	97.0%		
	Anti-Islanding Protection	Integrated		
	Battery Input Reverse Polarity Protection	Integrated		
	Insulation Resistor Detection	Integrated		
	Residual Current Monitoring Unit	Integrated		
	Output Over Current Protection	Integrated		
	Grid Output Short Protection	Integrated		
General Data	Output Over Voltage Protection	Integrated		
	Operating Temperature Range (°C)	-35~60		
	Relative Humidity	0~95%		
	Operating Altitude (m)	4000		
	Cooling	Natural Convection		
	Noise (dB)	<35		
	User Interface	LED & APP		
	Communication with BMS	CAN		
	Communication with Meter	RS485		
	Communication with Portal	Wi-Fi/Ethernet		
	Weight (kg)	17		
	Size (Width*Height*Depth mm)	354*433*147		
	Mounting	Wall Bracket		
	Protection Degree	IP65		
	Standby Self-Consumption (W)	<10		
Certifications & Standards	Topology	Transformerless		
	Grid Regulation	AS/NZS 4777.2:2015, G99,CEI 0-21,VDE4105-AR-N		
	Safety Regulation	IEC/EN62109-1&-2		
	EMC	EN61000-6-1,EN61000-6-2,EN61000-6-3,EN61000-6-4,EN61000-4-16, EN 61000-4-18, EN 61000-4-29		

*: An activation code is required when connecting to an approved Lithium-Ion Battery. It can be purchased from GoodWe's authorized dealers or distributors. GoodWe only acknowledges the activation code purchased from our authorized dealers or distributors. GoodWe's Smart Meter, an optional accessory, is able to monitor load consumption. It can be purchased through authorized dealers or distributors.

ET Series

Three Phase Hybrid Inverter (HV Battery)



Technical Data		GW5k-ET	GW8k-ET	GW10k-ET
Battery Input Data	Battery Type	Li-Ion		
	Battery Voltage Range (V)	180~600		
	Max. Charging Current (A)	25		
	Max. Discharging Current (A)	25		
	Charging Strategy for Li-Ion Battery	Self-adaption to BMS		
PV String Input Data	Max. DC Input Power (W)	6500	9600	13000
	Max. DC Input Voltage (V)*	1000		
	MPPT Range (V)	200~850		
	Start-up Voltage (V)	180		
	MPPT Range for Full Load (V)	240~850	380~850	460~850
	Nominal DC Input Voltage (V)	620		
	Max. Input Current (A)	12.5/12.5		
	Max. Short Current (A)	15.2/15.2		
	No. of MPP Trackers	2		
	No. of Strings per MPP Tracker	1/1		
AC Output Data (On-grid)	Nominal Apparent Power Output to Utility Grid (VA)	5000	8000	10000
	Max. Apparent Power Output to Utility Grid (VA)**	5500	8800	11000
	Max. Apparent Power from Utility Grid (VA)	10000	15000	15000
	Nominal Output Voltage (V)	400/380, 3L/N/PE		
	Nominal Output Frequency (Hz)	50/60		
	Max. AC Current Output to Utility Grid (A)	8.5	13.5	16.5
	Max. AC Current From Utility Grid (A)	15.2	22.7	22.7
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
	Output THDi (@Nominal Output)	<3%		
	AC Output Data (Back-up)	Max. Output Apparent Power (VA)	5000	8000
Peak Output Apparent Power (VA)***		10000, 60sec	16000, 60sec	16500, 60sec
Max. Output Current (A)		8.5	13.5	16.5
Nominal Output Voltage (V)		400/380		
Nominal Output Frequency (Hz)		50/60		
Output THDv (@Linear Load)		<3%		
Efficiency	Max. Efficiency	98.0%	98.2%	98.2%
	Max. Battery to Load Efficiency	97.5%		
	European Efficiency	97.2%	97.5%	97.5%
Protection	Anti-Islanding Protection	Integrated		
	PV String Input Reverse Polarity Protection	Integrated		
	Insulation Resistor Detection	Integrated		
	Residual Current Monitoring Unit	Integrated		
	Output Over Current Protection	Integrated		
	Output Short Protection	Integrated		
	Battery Input Reverse Polarity Protection	Integrated		
	Output Over Voltage Protection	Integrated		
General Data	Operating Temperature Range (°C)	-35~60		
	Relative Humidity	0~95%		
	Operating Altitude (m)	≤4000		
	Cooling	Nature Convection		
	Noise (dB)	<30		
	User Interface	LED & APP		
	Communication with BMS	RS485; CAN		
	Communication with Meter	RS485		
	Communication with EMS	RS485 (Insulated)		
	Communication with Portal	Wi-Fi		
	Weight (kg)	24		
	Size (Width*Height*Depth mm)	516*415*180		
	Mounting	Wall Bracket		
	Protection Degree	IP65		
	Standby Self-Consumption (W)****	<15		
Topology	Transformerless			
Standards	Grid Regulation	CEI 0-21; VDE4105-AR-N; VDE0126-1-1; EN50438; G83/2; G100		
	Safety Regulation	IEC62109-1&-2, IEC62040-1		
	EMC	EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29		

*: Maximum operating voltage is 950V.

**:: According to local grid regulation.

***: Can be reached only if PV and battery power is enough.

****: No Back-up output.

ES Series

Single Phase Hybrid Inverter (LV Battery)



Technical Data		GW3648D-ES	GW5048D-ES
Battery Input Data	Battery Type	Li-Ion or Lead-acid*1	
	Nominal Battery Voltage (V)	48	
	Max. Charging Voltage (V)	≤60 (Configurable)	
	Max. Charging Current (A)*1	75	100
	Max. Discharging Current (A)*1	75	100
	Battery Capacity (Ah)*2	50~2000	
Charging Strategy for Li-Ion Battery		Self-adaption to BMS	
PV String Input Data	Max. DC Input Power (W)	4600	6500
	Max. DC Input Voltage (V)*3	580	
	MPPT Range (V)	125~550	
	Start-up Voltage (V)*4	150	
	MPPT Range for Full Load (V)	170~500	
	Nominal DC Input Voltage (V)	360	
	Max. Input Current (A)	11/11	
	Max. Short Current (A)	13.8/13.8	
	No. of MPP Trackers	2	
	No. of Strings per MPP Tracker	1	
AC Output Data (On-grid)	Nominal Apparent Power Output to Utility Grid (VA)	3680	4600
	Max. Apparent Power Output to Utility Grid (VA)	3680	5100
	Max. Apparent Power from Utility Grid (VA)	7360	9200
	Nominal Output Voltage (V)	230	
	Nominal Output Frequency (Hz)	50/60	
	Max. AC Current Output to Utility Grid (A)	16	24.5*5
	Max. AC Current From Utility Grid (A)	32	40
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
	Output THDi (@Nominal Output)	<3%	
	AC Output Data (Back-up)	Max. Output Apparent Power (VA)	3680
Peak Output Apparent Power (VA)*6		5520,10sec	6900,10sec
Automatic Switch Time (ms)		10	
Max. Output Current (A)		16	20
Nominal Output Voltage (V)		230 (±2%)	
Nominal Output Frequency (Hz)		50/60 (±0.2%)	
Output THDv (@Linear Load)		<3%	
Efficiency	Max. Efficiency	97.6%	
	Max. Battery to Load Efficiency	94.0%	
	European Efficiency	97.0%	
Protection	Anti-Islanding Protection	Integrated	
	PV String Input Reverse Polarity Protection	Integrated	
	Insulation Resistor Detection	Integrated	
	Residual Current Monitoring Unit	Integrated	
	Output Over Current Protection	Integrated	
	Output Short Protection	Integrated	
	Output Over Voltage Protection	Integrated	
General Data	Operating Temperature Range (°C)	-25~60	
	Relative Humidity	0~95%	
	Operating Altitude (m)	≤4000	
	Cooling	Natural Convection	
	Noise (dB)	<25	
	User Interface	LED & APP	
	Communication with BMS*7	RS485; CAN	
	Communication with Meter	RS485	
	Communication with Portal	Wi-Fi	
	Weight (kg)	28	30
	Size (Width*Height*Depth mm)	516*440*184	
	Mounting	Wall Bracket	
	Protection Degree	IP65	
	Standby Self-Consumption (W)	<13	
	Topology	High Frequency Isolation	
Certifications & Standards	Grid Regulation	VDE-AR-N 4105, VDE0126-1-1, AS4777.2, G83/2, CEI 0-21, NRS 097-2-1, EN50438	
	Safety Regulation	IEC/EN62109-1&-2, IEC62040-1	
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29	

*1: Lead-acid battery use refers to Approved Battery Options Statement .

The actual charge and discharge current also depends on the battery.

*2: Under off-grid mode, then battery capacity should be more than 100Ah.

*3: When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V.

*4: 4600W for VDE 0126-1-1 & VDE-AR-N4105, 4950W for AS4777.2(GW5048D-ES); 4050W for CEI 0-21 (GW3648D-ES).

*5: 21.7A for AS4777.2.

*6: Can be reached only if PV and battery power is enough.

*7: The standard configuration is CAN.

EM Series

Single Phase Hybrid Inverter (LV Battery)



Technical Data		GW3048-EM	GW3648-EM	GW5048-EM
Battery Input Data	Battery Type	Li-Ion or Lead-acid*1		
	Nominal Battery Voltage (V)	48		
	Max. Charging Voltage (V)	≤60 (Configurable)		
	Max. Charging Current (A)*1	50		
	Max. Discharging Current (A)*1	50		
	Battery Capacity (Ah)*2	50~2000		
Charging Strategy for Li-Ion Battery		Self-adaption to BMS		
PV String Input Data	Max. DC Input Power (W)	3900	4600	6500
	Max. DC Input Voltage (V)*3	550		
	MPPT Range (V)	100~500		
	Start-up Voltage (V)*4	150		
	MPPT Range for Full Load (V)	280~500	170~500	230~500
	Nominal DC Input Voltage (V)	360		
	Max. Input Current (A)	11	11/11	11/11
	Max. Short Current (A)	13.8	13.8/13.8	13.8/13.8
	No. of MPP Trackers	1	2	2
	No. of Strings per MPP Tracker	1		
AC Output Data (On-grid)	Nominal Apparent Power Output to Utility Grid (VA)	3000	3680	5000*5
	Max. Apparent Power Output to Utility Grid (VA)	3000*6	3680*6	5000*6
	Max. Apparent Power from Utility Grid (VA)	5300		
	Nominal Output Voltage (V)	230		
	Nominal Output Frequency (Hz)	50/60		
	Max. AC Current Output to Utility Grid (A)	13.6	16	22.8*7
	Max. AC Current From Utility Grid (A)	23.6		
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
AC Output Data (Back-up)	Output THDi (@Nominal Output)	<3%		
	Max. Output Apparent Power (VA)	2300		
	Peak Output Apparent Power (VA)*8	3500, 10sec		
	Automatic Switch Time (ms)	10		
	Max. Output Current (A)	10		
	Nominal Output Voltage (V)	230 (±2%)		
	Nominal Output Frequency (Hz)	50/60 (±0.2%)		
Efficiency	Output THDv (@Linear Load)	<3%		
	Max. Efficiency	97.6%		
	Max. Battery to Load Efficiency	94.5%		
Protection	European Efficiency	97.0%		
	Anti-Islanding Protection	Integrated		
	PV String Input Reverse Polarity Protection	Integrated		
	Insulation Resistor Detection	Integrated		
	Residual Current Monitoring Unit	Integrated		
	Output Over Current Protection	Integrated		
	Output Short Protection	Integrated		
General Data	Output Over Voltage Protection	Integrated		
	Operating Temperature Range (°C)	-25~60		
	Relative Humidity	0~95%		
	Operating Altitude (m)	≤4000		
	Cooling	Natural Convection		
	Noise (dB)	<25		
	User Interface	LED & APP		
	Communication with BMS*9	RS485; CAN		
	Communication with Meter	RS485		
	Communication with Portal	Wi-Fi		
	Weight (kg)	16	17	17
	Size (Width*Height*Depth mm)	347*432*175		
	Mounting	Wall Bracket		
Protection Degree	IP65			
Standby Self-Consumption (W)	<13			
Topology	High Frequency Isolation			
Certifications & Standards	Grid Regulation	AS/NZS 4777.2:2015, G83/2, G100, CEI 0-21, VDE4105-AR-N, VDE0126-1-1, NRS 097-2-1, RD1699, UNE206006, EN50438		
	Safety Regulation	IEC/EN62109-1&-2, IEC62040-1		
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29		

*1: Lead-acid battery use refers to Approved Battery Options Statement .
The actual charge and discharge current also depends on the battery.

*2: Under off-grid mode, then battery capacity should be more than 100Ah.

*3: Maximum operating dc voltage is 530V.

*4: When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V.

*5: 4600 for VDE0126-1-1&VDE-AR-N4105 & CEI 0-21(GW5048-EM).

*6: For CEI 0-21 GW3048-EM is 3300W, GW3648-EM is 4050W, GW5048-EM is 5100W;
for VDE-AR-N4105 GW5048-EM is 4600.

*7: 21.7A for AS4777.2.

*8: Can be reached only if PV and battery power is enough.

*9: The standard configuration is CAN.

DSS Series

Single Phase Hybrid Ready Inverter



Technical Data		GW3600D-SS	GW4200D-SS	GW5000D-SS
PV String Input Data	Max. DC Input Power (W)	4680	5500	6500
	Max. DC Input Voltage (V)	600		
	MPPT Range (V)	80~550		
	Start-up Voltage (V)	80		
	MPPT Range for Full Load (V)	180~500	210~500	240~500
	Nominal DC Input Voltage (V)	360		
	Max. Input Current (A)	12.5/12.5		
	Max. Short Current (A)	15.6		
	No. of MPP Trackers	2		
	No. of Input Strings per Tracker	1		
AC Output Data	Nominal Output Power (W)	3600	4200	5000
	Max. Output Apparent Power (VA)	3960	4620	5500
	Nominal Output Voltage (V)	220/230		
	Nominal Output Frequency (Hz)	50/60		
	Max. Output Current (A)	18	21	25
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
	Output THDi (@Nominal Output)	<3%		
Efficiency	Max. Efficiency	98.6%	98.6%	98.6%
	European Efficiency	>98%	>98%	>98%
Protection	Anti-Islanding Protection	Integrated		
	Input Reverse Polarity Protection	Integrated		
	Insulation Resistor Detection	Integrated		
	DC SPD Protection	Integrated		
	AC SPD Protection	Integrated		
	Residual Current Monitoring Unit	Integrated		
	Output Over Current Protection	Integrated		
	Output Short Protection	Integrated		
	Output Over Voltage Protection	Integrated		
General Data	Operating Temperature Range (°C)	-25~60		
	Relative Humidity	0~100%		
	Operating Altitude (m)	≤4000		
	Cooling	Natural Convection		
	Noise (dB)	<25		
	User Interface	LCD or APP		
	Communication	WiFi		
	Weight (kg)	11		
	Size (Width*Height*Depth mm)	336*400*124		
	Protection Degree	IP65		
	Night Self-Consumption (W)	<1		
	Topology	Transformerless		
Certifications & Standards	Grid Regulation	VDE4105-AR-N, VDE0126-1-1z, AS4777.2, CEI 0-21, RD1699, IEEE1547, ABNT NBR 16149 : 2013		
	Safety Regulation	IEC 62109		
	EMC	EN61000		

BH Series (AC-Coupled)

Single Phase AC Retrofit Inverter (HV Battery)



Technical Data		GW1000-BH	GW2000-BH	GW3000-BH
Battery Input Data	Battery Type	Li-Ion		
	Battery Voltage Range (V)	80~400		
	Start-up Voltage (V)	80		
	Max. Charging/Discharging Current (A)	13	15	15
	Charging /Discharging Strategy for Li-Ion Battery	Self-adaption to BMS		
AC Output Data	Nominal Power Output to Utility Grid (W)	1000	2000	3000
	Max. Apparent Power Output to Utility Grid (VA)	1000	2000	3000
	Nominal Output Voltage (V)	230		
	Nominal Output Frequency (Hz)	50/60		
	Max. AC Current Output to Utility Grid (A)	5	10	13.5
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
	Output THDi (@Nominal Output)	<3%		
Efficiency	Max. Efficiency	96.0%	96.5%	96.5%
Protection	Anti-Islanding Protection	Integrated		
	Battery Input Reverse Polarity Protection	Integrated		
	Insulation Resistor Detection	Integrated		
	Residual Current Monitoring Unit	Integrated		
	Output Over Current Protection	Integrated		
	Output Short Protection	Integrated		
	Output Over Voltage Protection	Integrated		
General Data	Operating Temperature Range (°C)	-25~60		
	Relative Humidity	0~95%		
	Operating Altitude (m)	≤4000		
	Cooling	Natural Convection		
	Noise (dB)	<25		
	User Interface	LED & APP		
	Communication with BMS	CAN		
	Communication with Meter	RS485		
	Communication with Portal	Wi-Fi/Ethernet		
	Weight (kg)	8.5		
	Size (Width*Height*Depth mm)	344*274.5*128		
	Mounting	Wall Bracket		
	Protection Degree	IP65		
	Standby Self-Consumption (W)	<15		
Topology	Transformerless			
Certifications & Standards	Grid Regulation	G98		
	Safety Regulation	IEC/EN62109-1&-2, IEC62040-1		
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN61000-4-16, EN61000-4-18, EN61000-4-29		

BT Series (AC-Coupled)

Three Phase AC Retrofit Inverter (HV Battery)



Technical Data		GW5K-BT	GW6K-BT	GW8K-BT	GW10K-BT
Battery Input Data	Battery Type	Li-Ion			
	Battery Voltage Range (V)	180~600			
	Max. Charging Current (A)	25			
	Max. Discharging Current (A)	25			
	Charging Strategy for Li-Ion Battery	Self-adaption to BMS			
AC Output Data (On-grid)	Nominal Apparent Power Output to Utility Grid (VA)	5000	6000	8000	10000
	Max. Apparent Power Output to Utility Grid (VA) *	5500	6600	8800	11000
	Max. Apparent Power from Utility Grid (VA)	10000	12000	15000	15000
	Nominal Output Voltage (V)	400/380, 3L/N/PE			
	Nominal Output Frequency (Hz)	50/60			
	Max. AC Current Output to Utility Grid (A)	8.5	10.5	13.5	16.5
	Max. AC Current From Utility Grid (A)	15.2	18.2	22.7	22.7
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
	Output THDi (@Nominal Output)	<3%			
UPS Output Data (Back-up)	Max. Output Apparent Power (VA)	5000	6000	8000	10000
	Peak Output Apparent Power (VA) **	10000, 60sec	12000, 60sec	15000, 60sec	15000, 60sec
	Max. Output Current (A)	8.5	10.5	13.5	16.5
	Automatic Switch Time (s)	≤0.01			
	Nominal Output Voltage (V)	400/380			
	Nominal Output Frequency (Hz)	50/60			
	Output THDv (@Linear Load)	<3%			
Efficiency	Max. Battery to Load Efficiency	97.5%			
	Max. Charge Efficiency	97.5%			
Protection	Anti-Islanding Protection	Integrated			
	Insulation Resistor Detection	Integrated			
	Residual Current Monitoring Unit	Integrated			
	Output Over Current Protection	Integrated			
	Output Short Protection	Integrated			
	Battery Input Reverse Polarity Protection	Integrated			
	Output Over Voltage Protection	Integrated			
General Data	Operating Temperature Range (°C)	-35~60			
	Relative Humidity	0~95%			
	Operating Altitude (m)	≤4000			
	Cooling	Nature Convection			
	Noise (dB)	<30			
	User Interface	LED & APP			
	Communication with BMS	RS485; CAN			
	Communication with Meter	RS485			
	Communication with EMS	RS485 (Insulated)			
	Communication with Portal	Wi-Fi			
	Weight (kg)	21			
	Size (Width*Height*Depth mm)	516*415*180			
	Mounting	Wall Bracket			
	Protection Degree	IP65			
	Standby Self-Consumption (W) ***	<15			
	Topology	Transformerless			
Certifications & Standards	Grid Regulation	CEI 0-21; VDE4105-AR-N; VDE0126-1-1; EN50438; G83/2; G100	AS/NZS 4777.2:2015	CEI 0-21; VDE4105-AR-N; VDE0126-1-1; EN50438; G83/2; G100	AS/NZS 4777.2:2015
	Safety Regulation	IEC/EN62109-1&-2, IEC62040-1			
	EMC	EN61000-6-1, EN61000-6-2, EN61000-6-3, EN61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29			

*: According to the local grid regulation.

** : Can be reached only if battery capacity is enough, otherwise will shut down.

***: No Back-up Output.

SBP Series (AC-Coupled)

Single Phase AC Retrofit Inverter (LV Battery)



Technical Data		GW3600S-BP	GW5000S-BP
Battery Input Data	Battery Type* ¹	Li-Ion or Lead-acid	
	Nominal Battery Voltage (V)	48	
	Max. Charging Voltage (V)	≤60 (Configurable)	
	Max. Charging Current (A)* ¹	75	100
	Max. Discharging Current (A)* ¹	75	100
	Battery Capacity (Ah)* ²	50~2000	
	Charging Strategy for Li-Ion Battery	Self-adaption to BMS	
AC Output Data (On-grid)	Nominal Power Output to Utility Grid (W)	3680	5000* ³
	Max. Apparent Power Output to Utility Grid (VA) ⁴	3680	5000
	Max. Apparent Power from Utility Grid (VA)	7360	9200
	Nominal Output Voltage (V)	230	
	Nominal Output Frequency (Hz)	50/60	
	Max. AC Current Output to Utility Grid (A)	16	22.8* ⁵
	Max. AC Current From Utility Grid (A)	32	40
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
	Output THDi (@Nominal Output)	<3%	
AC Output Data (Back-up)	Max. Output Apparent Power (VA)* ⁶	3680	5000
	Peak Output Apparent Power (VA)* ⁶	4416, 10sec	5500, 10sec
	Automatic Switch Time (ms)	<10	
	Nominal Output Voltage (V)	230 (±2%)	
	Nominal Output Frequency (Hz)	50/60 (±0.2%)	
	Max. Output Current (A)	16	22.8
	Output THDv (@Linear Load)	<3%	
Efficiency	Max. Efficiency	95.5%	
Protection	Anti-Islanding Protection	Integrated	
	Output Over Current Protection	Integrated	
	Output Short Protection	Integrated	
	Output Over Voltage Protection	Integrated	
General Data	Operating Temperature Range (°C)	-25~60	
	Relative Humidity	0~95%	
	Operating Altitude (m)	4000	
	Cooling	Nature Convection	
	Noise (dB)	<25	
	User Interface	LED & APP	
	Communication with BMS* ⁷	RS485; CAN	
	Communication with Meter	RS485	
	Communication with Portal	Wi-Fi	
	Weight (kg)	18.5	
	Size (Width*Height*Depth mm)	347*432*190	
	Mounting	Wall Bracket	
	Protection Degree	IP65	
	Standby Self-Consumption (W)	<15	
Topology	High Frequency Isolation		
Certifications & Standards	Grid Regulation	AS/NZS 4777.2:2015, G83/2, G100, CEI 0-21; RD1699; UNE206006; VDE4105-AR-N; VDE0126-1-1; EN50438	AS/NZS 4777.2:2015, G59/3, G100, CEI 0-21; RD1699; UNE206006; VDE4105-AR-N; VDE0126-1-1; EN50438
	Safety Regulation	IEC62477-1, IEC62040-1	
	EMC	EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29	

*¹: lead acid battery use refers to battery compatible statement (Not all lead acid batteries are compatible)

The actual charge and discharge current also depends on the battery.

*²: Battery capacity could be not less than 100Ah where the back-up function is to be applied.

*³: 4600W for VDE0126-1-1&VDE-AR-N 4105 and CEI 0-21.

*⁴: For CEI 0-21 GW3600S-BP is 4050W, GW5000S-BP is 5100W; for VDE-AR-N4105 GW5000S-BP is 4600W. *⁵: 21.7A for AS4777.2.

*⁶: Can be reached only if battery capacity is enough, otherwise will shut down.

*⁷: The standard configuration is CAN.

ESA Series

All-In-One Single Phase Storage Solution

Specifications	BCL9600
Battery Enclosure	
BCL9600	
Number of Battery Units	Up to 4 x 19" Rack Mountable Battery Packs
Storage Capacity	Up to 9.6kWh (4 x 2.4kWh Pylon Tech Batteries)
Battery Voltage	48V DC Nominal / 60V DC Maximum
Battery Chemistry	Lithium-ion with BMS
Access Type	Removable front Panels
Cable Specification	
Battery Cable Rating	4 x 65A
Battery Cable Type	8 AWG (8.36mm ²)
Battery Cable Termination (Battery Enclosure)	Surlok Amphenol Connector
Battery Cable Termination (Inverter)	Amphenol H4 (65A)
BMS Cable Type	Depends on Battery Type
BMS Cable Termination	Refer to Battery Enclosure Installation Manual
Ventilation Specification	
Ventilation Type	Passive and Active Cooling
Ventilation Control	Smart Temperature Control
Number of Fans	2
Fan Power	48V DC / 0.13A Per Fan
Fan Activation Temperature	Variable Depending on Charge/Discharge
Incoming Ventilation Aperture	288cm ² with Washable Filter
Outgoing Ventilation Aperture	288cm ² with Washable Filter
Passive Airflow Rate	30cm ³ /min
Active Airflow Rate	320cm ³ /min
General Data	
External Dimension (W x H x D)	W 516mm x H 1205mm x D 280mm (with Feet)
Mounting and Weight - Empty	32kg Rear Fixing
Mounting and Weight - with Batteries	130kg Typical
Ambient Temperature Range	Based on Battery Specification
Environmental Protection Rating	IP54 - Protected From Rain, Splashing and Spraying
Noise Emissions	Less than 25dB
Warranty	5 Years
Construction	Powder Coated Steel Chassis
Finish	Sealed, Powder Coated front Covers and Chassis
Supply	Ships Pre-assembled
Maintenance	Externally Serviceable Dust Filters



Technical Data	GW5048-ESA			
Battery Input Data				
Battery Type	Li-Ion	Nominal Output Frequency (Hz)	50/60 (±0.2%)	
Nominal Battery Voltage (V)	48	Output THDv (@Linear Load)	<3%	
Battery Voltage Range(V)	40~60	Back-up loads AC disconnect	Integrated 2 pole 25A MCB	
Maximum charging power (W)	4600	Manual back-up load AC bypass switch	Integrated	
Maximum discharge power (W)	4600	Efficiency		
Maximum charging current(A)	85	Max. Efficiency	97.6%	
Maximum discharging current(A)	100	European averaged efficiency	97.0%	
Battery charging method	Self-adaption to BMS	Max. Battery to Load Efficiency	94.0%	
Battery disconnect	Integrated 2 pole DC breaker 125A DC per pole	Protection		
PV String Input Data			Anti-islanding Protection	Integrated
Max. DC Input Power (W)	6500	PV String Input Reverse Polarity Protection	Integrated	
Max. DC Input Voltage (V)	580	Insulation Resistor Detection	Integrated	
MPPT Range (V)	125~550	Residual Current Monitoring Unit	Integrated	
Start-up Voltage (V)	150	Output Over Current Protection	Integrated	
Nominal DC Input Voltage (V)	360	Output Short Protection	Integrated	
Max. Input Current (A)	11/11	Output Over Voltage Protection	Integrated	
Max. Short Current (A)	13.8/13.8	General Data		
No. of MPP Trackers	2	Operating Temperature Range (°C)	-25~60	
No. of Strings per MPP Tracker	1	Relative Humidity	0~95%	
Solar array switch	Integrated	Operating Altitude (m)	4000	
AC Output Data (On-grid)			Cooling	Nature Convection
Max. Apparent Power Output to Utility Grid (VA)*	4600/5100	Noise (dB)	<25	
Max. Apparent Power from Utility Grid (VA)	9200	User Interface	LED & APP	
Nominal Output Voltage (V)	230	Communication with BMS	CAN	
Nominal Output Frequency (Hz)	50/60	Communication with Meter	RS485	
Max. AC Current Output to Utility Grid (A)	22.8	Communication with Portal	Wi-Fi	
Max. AC Current From Utility Grid (A)	40	Weight (kg)	Inverter 32kg, BoS 12kg, total 44kg	
Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	Size (Width*Height*Depth mm)	516 x 832 x 290	
Output THDi (@Nominal Output)	<3%	Mounting	Wall Bracket	
Grid disconnect	Integrated 2 pole 40A MCB	Protection Degree	IP65	
AC Output Data (Back-up)			Standby Self-Consumption (W)	<13
Nominal Output Apparent Power (VA)	4600	Topology	Battery High Frequency Isolation/Solar Transformerless	
Nominal Output Current (A)	20	Certifications & Standards		
Peak Output Apparent Power (VA)**	6900 (10 seconds maximum)	Grid Regulation	CEI 0-21;VDE4105-AR-N	
Nominal Output Voltage (V)	230 (±2%)	Safety Regulation	IEC/EN62109-1&2, IEC62040-1	
		EMC	EN61000-6-4, EN 61000-4-16, EN 61000-4-18, EN 61000-4-29	

*:4600VA for VDE-AR-N4105,5100VA for other country

** : Can be reached only if PV and battery power is enough

Product Strengths

Save money up to zero cost



Uninterrupted power supply, 10ms reaction

UPS

Up to 10 years warranty supported by strong bankability



Easy WiFi setup via remote APP settings



Fanless design, long lifespan



Charge battery @ off-peak price



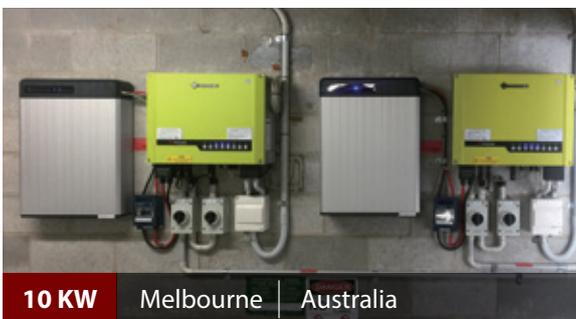
Project Cases



5 KW Prague | Czech Republic



5 KW London | UK



10 KW Melbourne | Australia



5 KW x20 pcs KZN Balito | South Africa

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