![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.
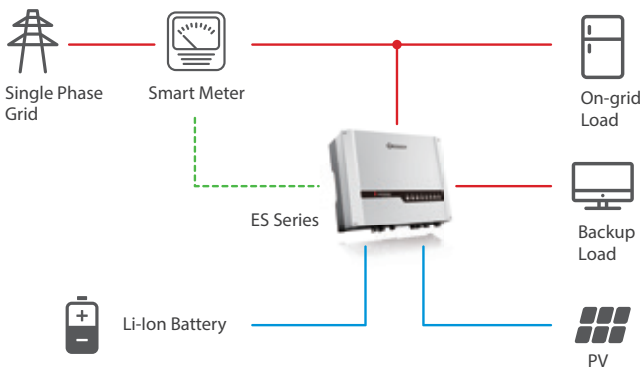
Functional Introduction

- 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.
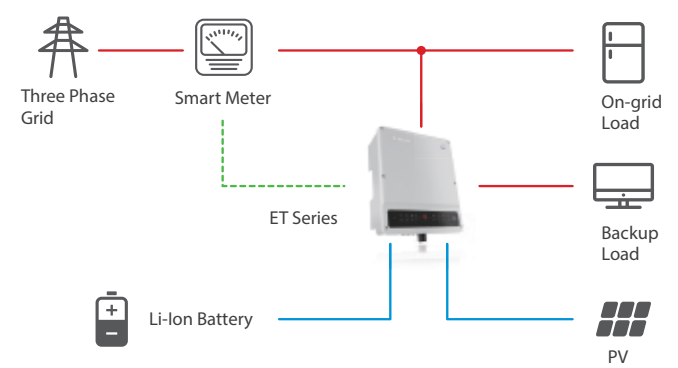
System Topology Illustration

AC cable | DC cable | COM cable

01 Basic Application

Single Phase Grid

Smart Meter

ES Series

Li-Ion Battery

On-grid Load

Backup Load

PV

02 Basic Application Three Phase

Three Phase Grid

Smart Meter

ET Series

Li-Ion Battery

On-grid Load

Backup Load

PV

03 Three-phase Application Proposal

Three Phase Grid

Smart Meter

Backup Load

ES Series

Li-Ion Battery

PV

Backup Load

ES Series

Li-Ion Battery

PV

Backup Load

ES Series

Li-Ion Battery

PV

On-grid Load

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.
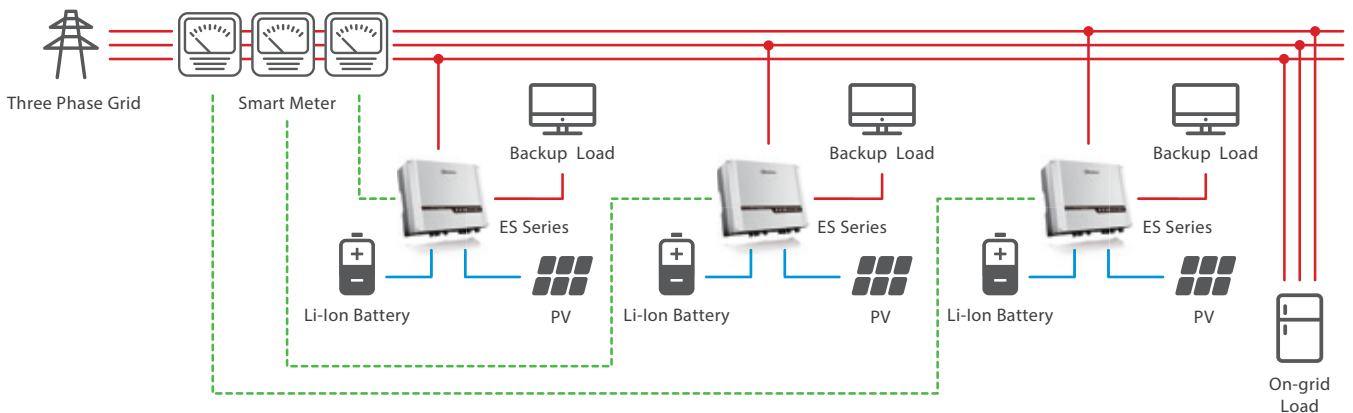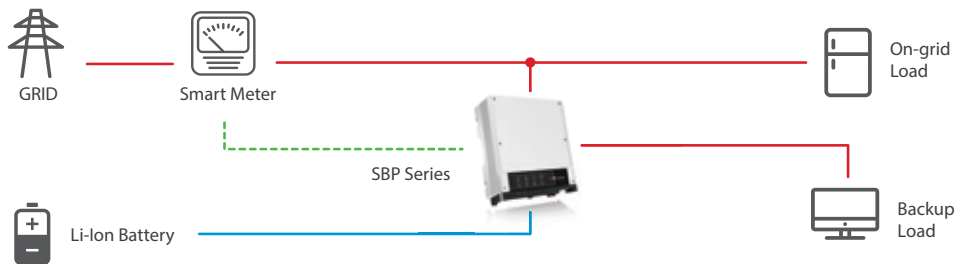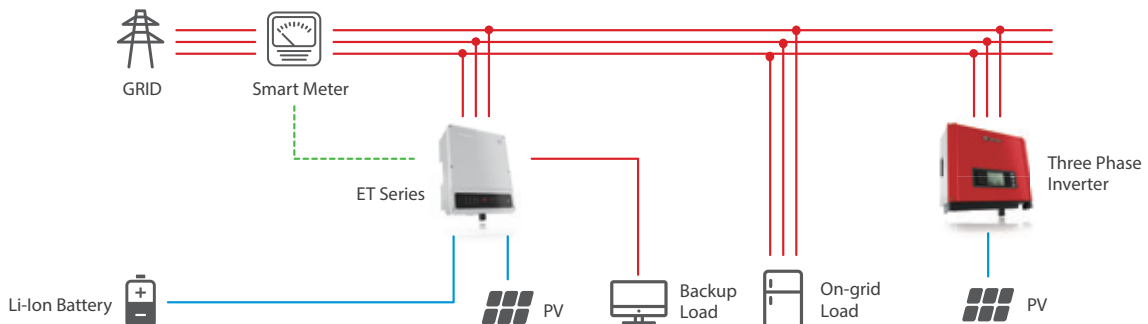
System Topology Illustration

GRID   Smart Meter   On-grid Load   SBP Series   Li-Ion Battery   Backup Load

Extending Storage System Capacity by More Grid-Tied Inverters   Three Phase

GRID   Smart Meter   ET Series   Three Phase Inverter   Li-Ion Battery   PV   Backup Load   On-grid Load   PV

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.
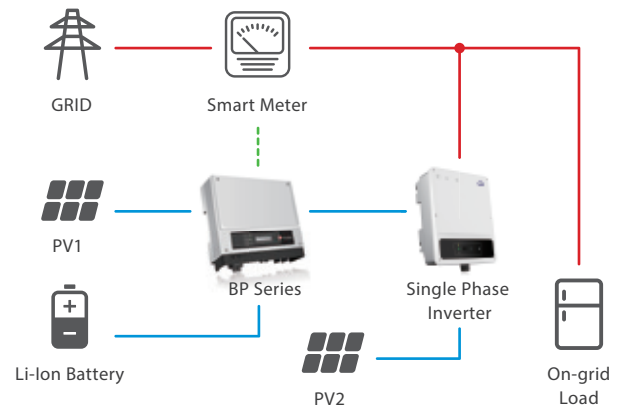
Functional Introduction

- 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

GRID — Smart Meter — Single Phase Inverter

PV1

BP Series

Li-Ion Battery

On-grid Load
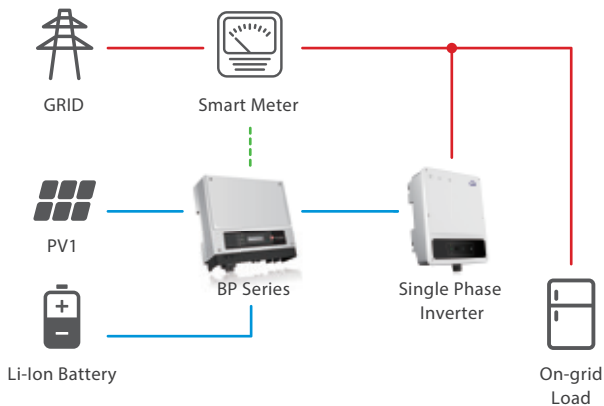
02 System Upgrading Design for Single Phase & Dual MPPT Inverters

GRID — Smart Meter — Single Phase Inverter

PV1

BP Series

Li-Ion Battery

PV2

On-grid Load

# 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

GRID — Smart Meter

SBP Series

Li-Ion Battery

Backup Load

On-grid Load

Single Phase Inverter

PV
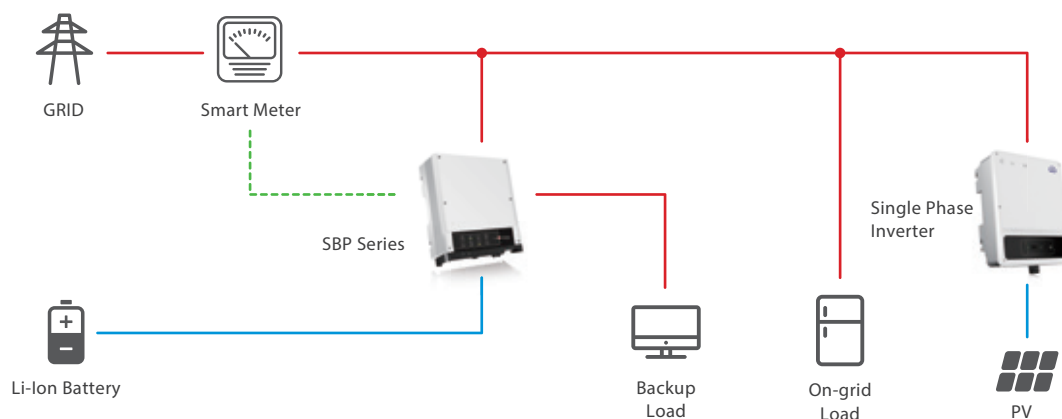
02 System solutions for one three phase inverter

GRID   Smart Meter

SBP Series

Li-Ion Battery

Backup Load

On-grid Load

Three Phase Inverter

PV
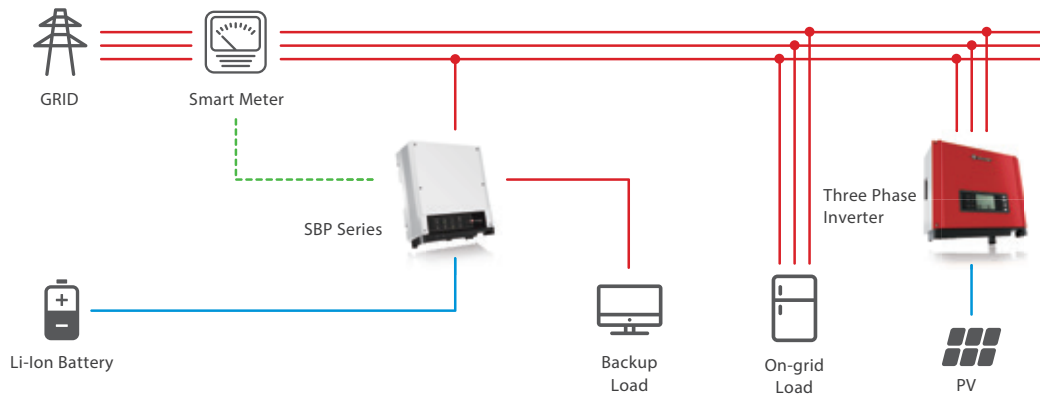
Off-grid System Solutions

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

ES Series

Li-Ion Battery

Backup Load

PV

02 Application Proposal with Generator included

ATS

ES Series

Li-Ion Battery

Backup Load

Generator

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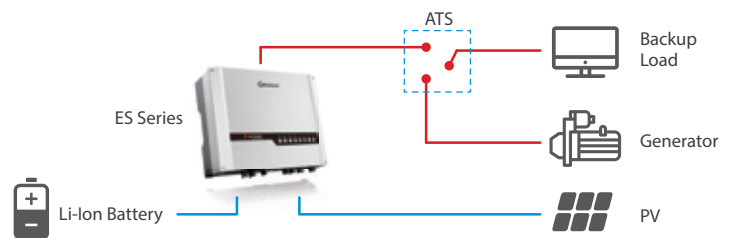
03 Application Proposal with Generator included (Three Phase)   `Three Phase`

ATS

ET Series

Li-Ion Battery

Backup Load

Generator

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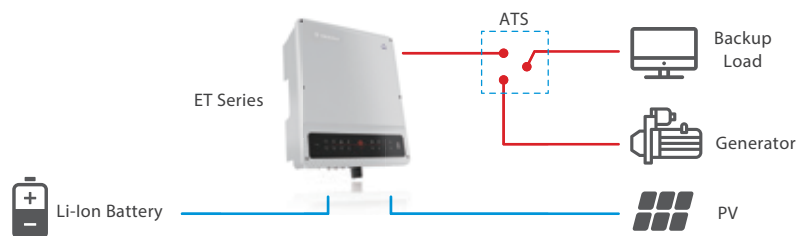
Incase of insufficient battery & PV supply without public grid, a generator could be adopted automatically or manually switch supply from hybrid back-up side to supply from generator

EH Series

Single Phase Hybrid Inverter (HV Battery)

Technical Data		GW3600D-EH	GW5000D-EH	GW6000D-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)	4320	6000	7200
	Max. DC Input Voltage (V)	580		
	MPPT Range (V)	100~550		
	Start-up Voltage (V)	90		
	MPPT Range for Full Load (V)	150~550	209~550	251~550
	Nominal DC Input Voltage (V)	375		
	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	Nominal Apparent Power Output to Utility Grid (VA)	3600	5000	6000
(On-grid)	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 Ouput Frequency (Hz)	50/60		
	Max. AC Current Output to Utility Grid (A)	16	21.7	26.1
	Max. AC Current From Utility Grid (A)	31.4	43.4	52.2
	Output Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)		
	Output THDi (@Nominal Output)	<3%		
AC Output Data*	Max. Output Apparent Power (VA)(@Linear Load)	3600	5000	6000
(Back-up)	Peak Output Apparent Power (VA)	4320 ,10sec	6000 ,10sec	7200 ,10sec
	Max.Output Current (A)(@Linear Load)	15.7	21.7	26.1
	Nominal Output Voltage (V) (@Linear Load)	230 (±2%)		
	Nominal Ouput Frequency (Hz)(@Linear Load)	50/60 (±0.2%)		
	Output THDv (@Linear Load)	<3%		
Efficiency	Max. Efficiency	97.6%		
	European Efficiency	97.2%		
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		
	Grid Output Short Protection	Integrated		
	Output Over Voltage Protection	Integrated		
General Data	Operating Temperature Range (℃)	-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		
	Communicaiton with Portal	Wi-Fi/Ethernet		
	Weight (kg)	15.6		
	Size (Width*Height*Depth mm)	354*433*147		
	Mounting	Wall Bracket		
	Protection Degree	IP65		
	Standby Self-Consumption (W)	<10		
	Topology	Transformerless		
Certifications & Standards	Grid Regulation	AS/NZS 4777.2:2015, G99,CEI 0-21,VDE4105-AR-N		
	Safety Regulation	IEC/EN62109-1&-2, IEC62040-1		
	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	9600
	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	380~850
	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 Ouput Freqency (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	10000
	Peak Output Apparent Power (VA)***	10000, 60sec	16000, 60sec	16500, 60sec
	Max. Ouput Current (A)	8.5	13.5	16.5
	Nominal Output Voltage (V)	400/380		
	Nominal Ouput 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 (℃)	-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)		
	Communicaiton 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	EN61000-6-1, EN61000-6-2, EN61000-6-3, 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*⁵	5100*⁵
	Max. Apparent Power from Utility Grid (VA)	7360	9200
	Nominal Output Voltage (V)	230	
	Nominal Output Freqency (Hz)	50/60	
	Max. AC Current Output to Utility Grid (A)	16	24.5*⁶
	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	4600
	Peak Output Apparent Power (VA)*⁷	5520,10sec	6900,10sec
	Automatic Switch Time (ms)	10	
	Max. Output Current (A)	16	20
	Nominal Output Voltage (V)	230 (±2%)	
	Nominal Output Freqency (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*⁸	RS485; CAN	
	Communication with Meter	RS485	
	Communicaiton 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: 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: 4600W for VDE 0126-1-1 &VDE-AR-N4105, 4950W for AS4777.2(GW5048D-ES); 4050W for CEI 0-21 (GW3648D-ES).
*⁶: 21.7A for AS4777.2.
*⁷: Can be reached only if PV and battery power is enough.
*⁸: 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 Freqency (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)		
	Output THDi (@Nominal Output)	<3%		
AC Output Data (Back-up)	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 Freqency (Hz)	50/60 (±0.2%)		
	Output THDv (@Linear Load)	<3%		
Efficiency	Max. Efficiency	97.6%		
	Max. Battery to Load Efficiency	94.5%		
	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 (℃)	-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		
	Communicaiton 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 Protectioin	Integrated		
	AC SPD Protectioin	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 (℃)	-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 Ouput 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		
	Communicaiton 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 Ouput Freqency (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. Ouput Current (A)	8.5	10.5	13.5	16.5
	Automatic Switch Time (s)	≤0.01			
	Nominal Output Voltage (V)	400/380			
	Nominal Ouput Frequency (Hz)	50/60			
	Output THDv (@Linear Load)	<3%			
Efficiency	Max. Battery to Load Efficiency	98.0%			
	Max. Charge Efficiency	98.0%			
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 (℃)	-35~60			
	Relative Humidity	0~95%			
	Operating Altitude (m)	≤4000			
	Cooling	Nature Convection			
	Noise (dB)	<30			
	User Interface	LED & APP			
	Communicaiton with BMS	RS485; CAN			
	Communication with Meter	RS485			
	Communication with EMS	RS485 (Insulated)			
	Communicaiton with Portal	Wi-Fi/LAN			
	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	Nominal Power Output to Utility Grid (W)	3680	5000*³
(On-grid)	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 Ouput 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	Max. Output Apparent Power (VA)*⁶	3680	5000
(Back-up)	Peak Output Apparent Power (VA)*⁶	4416, 10sec	5500, 10sec
	Automatic Switch Time (ms)	<10	
	Nominal Output Voltage (V)	230 (±2%)	
	Nominal Output Freqency (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	
	Communicaiton with BMS*⁷	RS485; CAN	
	Communicaiton with Meter	RS485	
	Communicaiton 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.

SH5000 Series

All-In-One Single Phase Storage Solution

Specifications	BE13200
Battery Enclosure	**BE13200**
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

Specifications	SH5000		SH5000	
Solar Array	**SH5000**		**Back up Loads Output**	
Number of Solar Array Inputs	2 (Individual Maximum Power Point Tracking)		Nominal AC Voltage/Frequency	230V AC, 50Hz, Single Phase
Maximum DC Open Circuit Voltage	580V DC		Continuous AC Power Rating	4600W AC (Derate Over 45°C Ambient)
MPPT Operating Range	125 – 550V		Maximum AC Power Rating	6900W AC (10 Seconds Maximum)
Starting Voltage	125V DC		Maximum AC Current	21.7A Continuous, 30A for 10 Seconds Maximum
Maximum DC Input Current (for Each Solar Array Input)	11A DC		Voltage THD	Less than 4.5% (with Linear Loads)
Solar Array Switch Rating	1000V DC		Back-up Loads AC Disconnect	25A MCB
Input Connectors	H4		Manual Back-up Load AC Bypass Switch	Integrated
Residual Current and Insulation Monitoring	Integrated		**Efficiency**	
Utility Interface			Maximum Efficiency (to Utility Grid)	97.6%
Nominal AC Voltage/Frequency	230V AC, 50Hz, Single Phase		European Averaged Efficiency	97.0%
Continuous AC Power Rating	5000W AC		Maximum Power Point Tracking Efficiency	99.9%
Maximum AC Power to Utility Grid	5000W AC (Derated Over 45C Ambient)		Efficiency (Powering Loads from Battery)	90% Typical
Maximum AC Current to Utility Grid	21.7A AC		Standby Losses	Less than 8W AC
Maximum AC Current from Utility Grid	40A AC		**General Data**	
Nominal AC Output Range	180 to 270V AC, 45 to 55Hz (Adjustable)		Dimensions (W x H x D)	516 mm x 832 mm x 290 mm
Current THD	Less than 1.5%		Mounting and Weight	Inverter 32kg, BoS 12kg, Total 44kg
Power Factor	0.8 Leading to 0.8 Lagging (Adjustable)		Ambient Temperature Range	-25 to 60°C Derate above 45°C
AC Overvoltage Category	Category III		Relative Humidity	0 to 95%
Anti-Islanding and AC Overcurrent Protection	Integrated		DC Overcurrent Category	Category II
Inverter Topology	Transformerless (with HF transformer isolation for Battery)		Moisture Location Category	4K4H
Battery interface			Environmental Protection Rating	IP65
Nominal DC Voltage	48V DC		Cooling	Natural Convection
Battery Compatibility	Refer to Redback Battery Enclosure Datasheet		Noise Emissions	Less than 25dB
Maximum Charging and Discharge Power (from battery)	4600W DC		Warranty	5 Years
Maximum Charging Current	85A DC		**User Interfac**	
Maximum Discharging Current	100A DC		Front Panel Display	Multi-Coloured LED Indicators
Battery Charging Method	BMS Controlled		Communications	Integrated WiFi + Ethernet for Smartphone and Web Monitoring
Typical Charging Voltage (Bulk/Absorption Phase)	57.0V DC		Remote Access	Web and Android/IOS Application
Battery Disconnect	Integrated 4 Pole DC Breaker 63A DC Per Pole		Power/Energy Monitoring	Includes 3 x Utility Grade (Class 1) Meters
Control Interfaces				
Signal Relay Outputs	4			
DRM Modes	0-8		Grid Regulation Compliance: AS4777.2, AS4777.3	
Remote Firmware Updates	Supported		Safety Certification: AS3100,IEC62109-1, IEC62109-2, IEC62040-1	
Relays	2 x 10A Omron			

Product Strengths

Save money up to
zero cost

Uninterrupted power
supply, 10ms reaction

UPS

Up to 10 years warranty supported
by strong bankability

10 YEARS

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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