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.

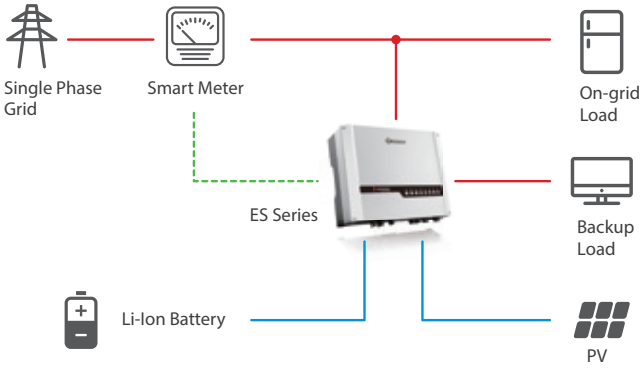
## Functional Introduction

- 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.

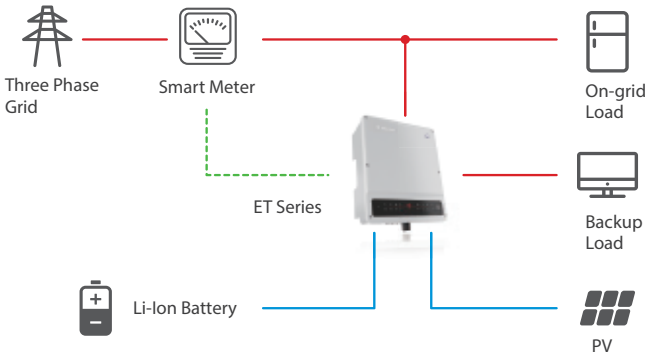
## System Topology Illustration

AC cable | DC cable | COM cable

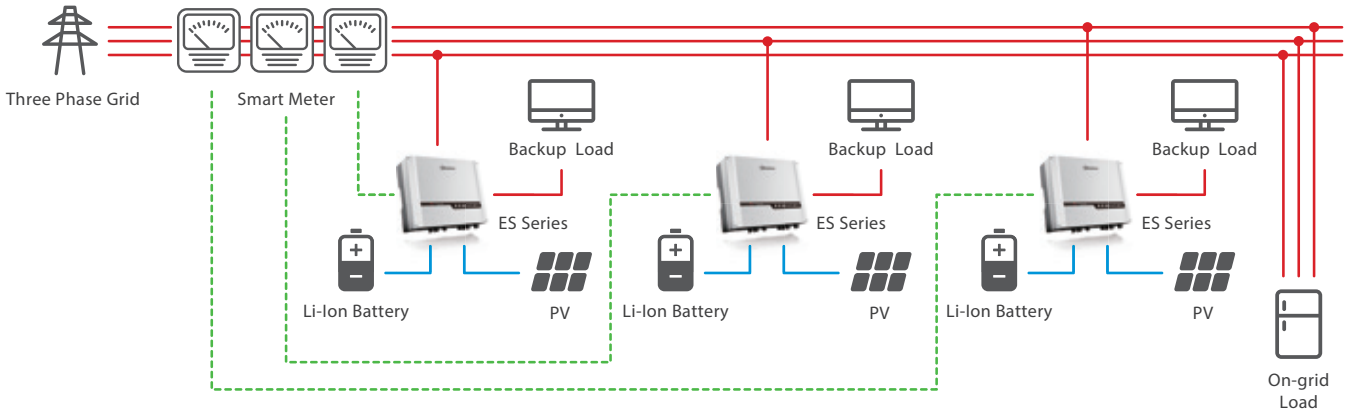
### 01 Basic Application




### 02 Basic Application Three Phase




### 03 Three-phase Application Proposal



# Energy Storage Solutions

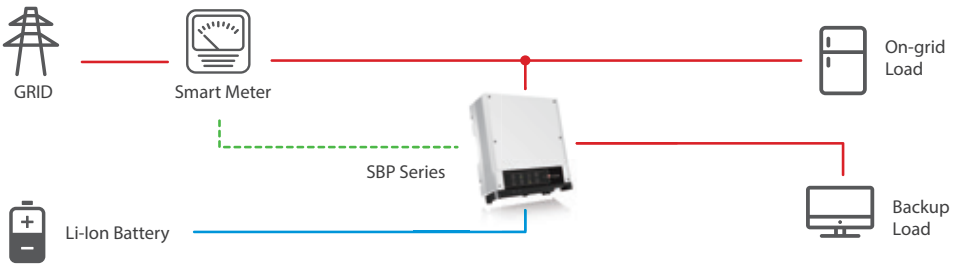
## Summary

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

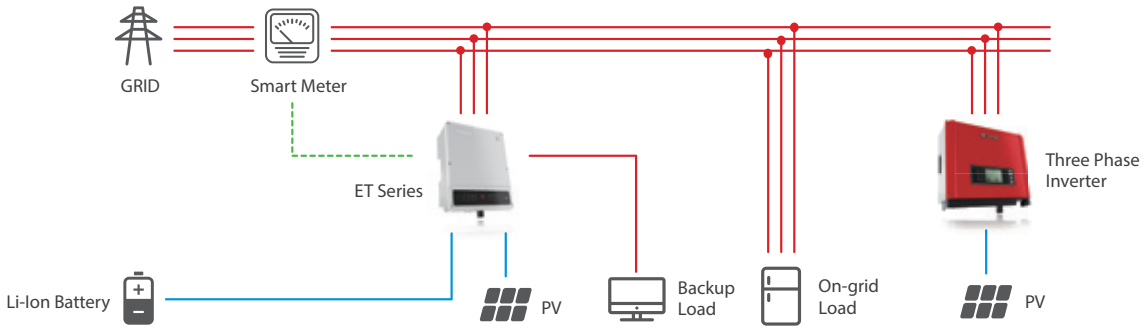
- Peak Shaving: Economic Mode allows you to set the time period on a flexible basis.
- Power Supply for Important Loads: Connected to the backup side of the inverter, loads such as refrigerators, routers, lamps, computers and other small appliances can be powered. When grid fails the system automatically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

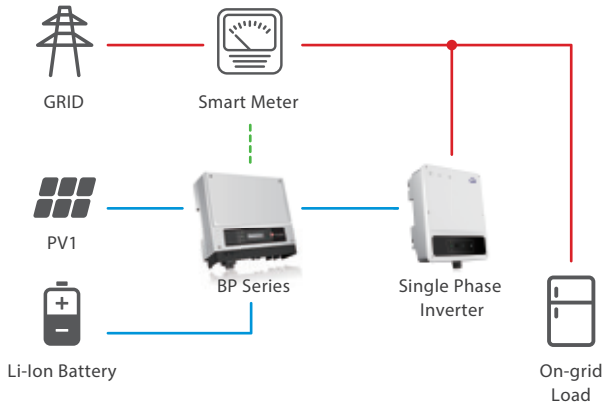
BP series, a product that aims for situations where there is a high electrical bill and a low FIT, is designed for upgrading to DC-coupled storage system based on the existing PV on-grid inverter, helping to reduce your bill by boosting self-consumption.

## Functional Introduction

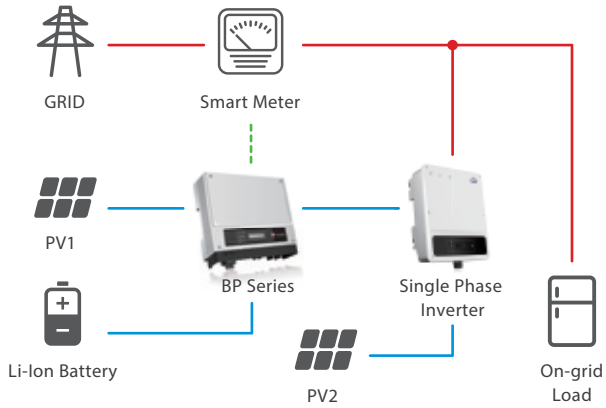
- Boosting Self-Consumption: With the electrical meter in place, it can automatically achieve self-consumption and offer better return on investment.

## 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

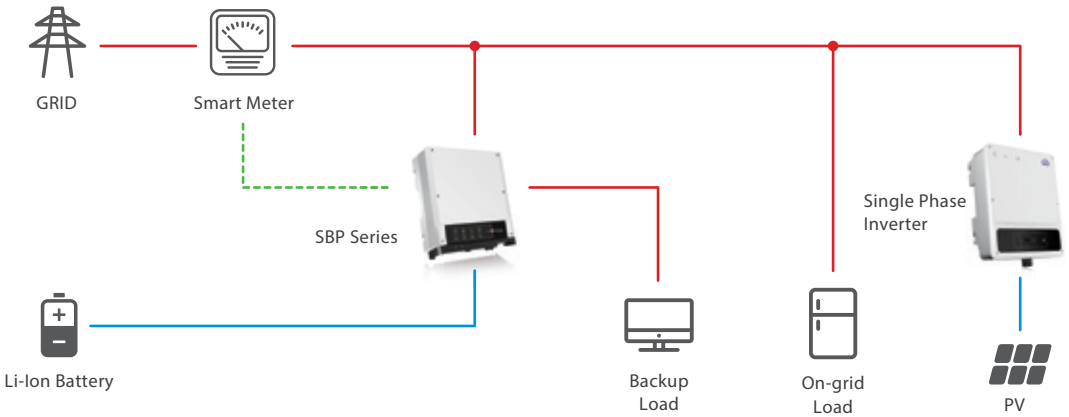
As a product intended for the retrofit of PV storage generators, SBP series is aimed for boosting self-consumption in areas with high electrical rate and a relatively low FIT as well as the availability of peak shaving. Compared with hybrid energy storage inverters, SBP is more cost-effective.

## Functional Introduction

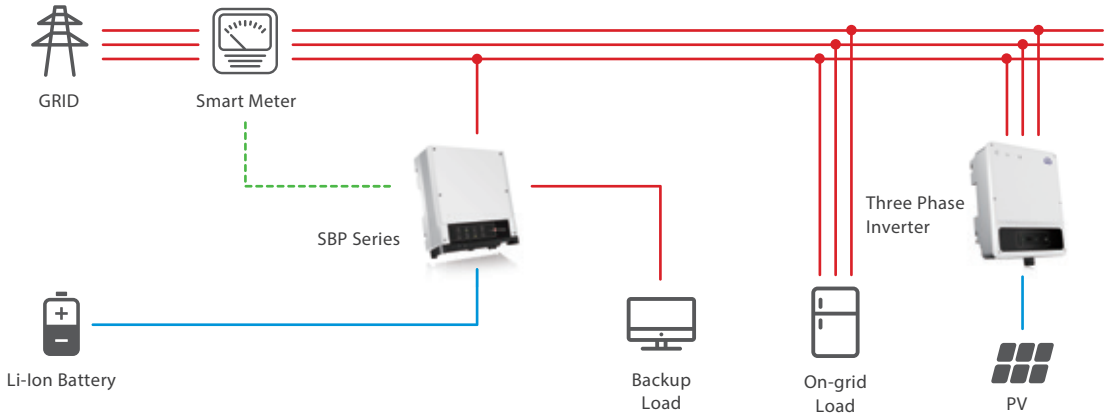
- Increasing Self-Consumption: During the day, the electricity from the PV array is used to optimize self-consumption. The excess is used to recharge the batteries and can be released to the loads at night. The highest proportion of self use is up to 95%.
- Peak Shaving: By setting the charging and discharging 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 a single 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.

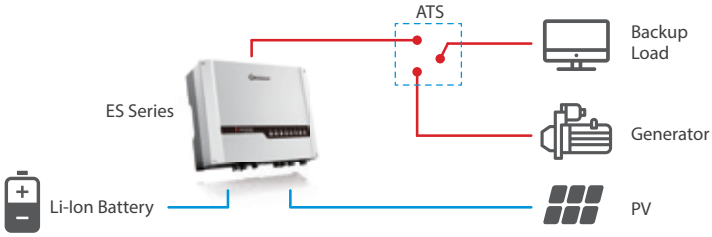
## Functional Introduction

- 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.

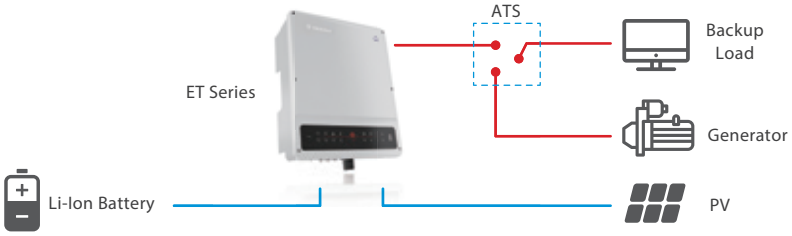
## System Topology Map

01 No Generator Application Proposal


02 Application Proposal with Generator included




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




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

# ES Series

## Hybrid Inverter

| 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% | |
| | Euro 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: 4600 for VDE 0126-1-1 &VDE-AR-N4105, 4950 for AS4777.2(GW5048D-ES); 4050 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

## Hybrid Inverter

| 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% | | |
| | Euro 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*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 3300, GW3648-EM is 4050, GW5048-EM is 5100; 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.

# SBP Series (AC-Coupled)

## Retrofit Solution

| Technical Data | | GW3600S-BP | GW5000S-BP |
|---|---|---|---|
| **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)*2 | 75 | 100 |
| | Max. Discharging Current (A)*2 | 75 | 100 |
| | Battery Capacity (Ah) | 50~2000*3 | |
| | Charging Strategy for Li-Ion Battery | Self-adaption to BMS | |
| **AC Output Data (On-grid)** | Nominal Power Output (W) | 3680 | 5000*4 |
| | Max. Apparent Power Output (VA)*5 | 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 (A) | 16 | 22.8*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)*7 | 3680 | 5000 |
| | Peak Output Apparent Power (VA)*7 | 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% | |
| **PV String Input Data** | Max. DC Input Power (W) | — | |
| | Max. DC Input Voltage (V) | — | |
| | Operating Voltage Range (V)*8 | — | |
| | Start-up Voltage (V) | — | |
| | Max. Input Current (A) | — | |
| | No. of PV String Input Connectors | — | |
| **DC Output Data** | Output Voltage during Daytime | — | |
| | Rated Output Voltage at Night (V) | — | |
| | Output Voltage Range (V) | — | |
| | Max Output Current (A) | — | |
| | No. of DC Output Connectors | — | |
| **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*9 | 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 | |
| | 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 Approved Battery Options Statement .
The actual charge and discharge current also depends on the battery.

*2: Charge & discharge current follows the command of BMS which doesn't exceed 50A. Note: Pylon US2000A default charge rate is 0.5C.
C means the battery capacity, such as the capacity is 50Ah, default charge current 0.5C is 0.5 * 50 = 25A

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

*4: 4600 for VDE0126-1-1&VDE-AR-N 4105 and CEI 0-21.

*5: For CEI 0-21 GW3600S-BP is 4050, GW5000S-BP is 5100; for VDE-AR-N4105 GW5000S-BP is 4600.

*6: 21.7A for AS4777.2.

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

*8: PV voltage should be lower than 9* V_Battery - 20V (V_Battery means real-time voltage of battery) to allow battery charge or discharge.

*9: The standard configuration is CAN.

# BP Series (DC-Coupled)

## Retrofit Solution

| Technical Data | | GW2500-BP |
|---|---|---|
| **Battery Input Data** | Battery Type | Li-Ion |
| | 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) | 50~1000 |
| | Charging Strategy for Li-Ion Battery | Self-adaption to BMS |
| **AC Output Data (On-grid)** | Nominal Power Output (W) | — |
| | Max. Apparent Power Output (VA)*[2] | — |
| | Max. Apparent Power from Utility Grid (VA) | — |
| | Nominal Output Voltage (V) | — |
| | Nominal Ouput Frequency (Hz) | — |
| | Max. AC Current Output (A) | — |
| | Max. AC Current From Utility Grid (A) | — |
| | Output Power Factor | — |
| | Output THDi (@Nominal Output) | — |
| **AC Output Data (Back-up)** | Max. Output Apparent Power (VA)*[3] | — |
| | Peak Output Apparent Power (VA)*[3] | — |
| | Automatic Switch Time (ms) | — |
| | Nominal Output Voltage (V) | — |
| | Nominal Output Freqency (Hz) | — |
| | Max. Output Current (A) | — |
| | Output THDv (@Linear Load) | — |
| **PV String Input Data** | Max. DC Input Power (W) | 6000 |
| | Max. DC Input Voltage (V) | 500 |
| | Operating Voltage Range (V)*[4] | 150~450 |
| | Start-up Voltage (V) | 120 |
| | Max. Input Current (A) | 25 |
| | No. of PV String Input Connectors | 1 |
| **DC Output Data** | Output Voltage during Daytime | Follow the MPP Tracker of Inverter |
| | Rated Output Voltage at Night (V) | 360 |
| | Output Voltage Range (V) | 250~360 |
| | Max Output Current (A) | 10 |
| | No. of DC Output Connectors | 1 |
| **Efficiency** | Max. Efficiency | 96.5% |
| **Protection** | Anti-islanding Protection | — |
| | Output Over Current Protection | — |
| | Output Short Protection | — |
| | Output Over Voltage Protection | — |
| **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 |
| | Communicaiton with BMS*[5] | RS485; CAN |
| | Communicaiton with Meter | RS485 |
| | Communicaiton with Portal | Wi-Fi |
| | Weight (kg) | 8 |
| | Size (Width*Height*Depth mm) | 344*274.5*128 |
| | Mounting | Wall Bracket |
| | Protection Degree | IP65 |
| | Standby Self Consumption (W) | <8 |
| | Topology | High Frequency Isolation |
| **Certifications & Standards** | Grid Regulation | — |
| | Safety Regulation | CE |
| | EMC | CE |

*[1]: Charge & discharge current follows the command of BMS which doesn't exceed 50A. Note: Pylon US2000A default charge rate is 0.5C.
C means the battery capacity, such as the capacity is 50Ah, default charge current 0.5C is 0.5 * 50 = 25A

*[2]: For CEI 0-21 GW3600S-BP is 4050, GW5000S-BP is 5100; for VDE-AR-N4105 GW5000S-BP is 4600.

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

*[4]: PV voltage should be lower than 9* V_Battery - 20V (V_Battery means real-time voltage of battery) to allow battery charge or discharge.

*[5]: The standard configuration is CAN.

# ET Series

## Three Phase Energy Storage Inverter

| 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% | |
| | Euro 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.

## 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

GOODWE
GOOD CHOICE


**GoodWe (China)**
No.189 Kunlunshan Rd., SND, Suzhou, 215163, China
T: +86 (0) 512 6239 7998
sales@goodwe.com
service.chn@goodwe.com

**GoodWe (Brazil)**
Rua Abelardo 45, Recife/PE, 52050-310
T: +55 54 992504491
sales@goodwe.com
servico.br@goodwe.com

**GoodWe (UK)**
6 Dunhams Court, Dunhams Lane, Letchworth
Garden City, SG6 1WB UK
T:+ 44 (0) 333 358 3184
enquiries@goodwe.com.uk
service@goodwe.com.uk

**GoodWe (Italy)**
Via Cesare Braico 61, 72100 Brindisi, Italy
T: +39 338 879 38 81; +39 831 162 35 52
valter.pische@goodwe.com
service.it@goodwe.com

**GoodWe (Australia)**
Level 14, 380 St. Kilda Road, Melbourne,
Victoria, 3004, Australia
T: +61 (0) 3 9918 3905
sales@goodwe.com
service.au@goodwe.com

**GoodWe (Korea)**
8F Invest Korea Plaza, 7 Heoleung-ro
Seocho-gu Seoul Korea (06792)
T: 822 3497 1066
sales@goodwe.com
Larry.Kim@goodwe.com

**GoodWe (Germany)**
Fürstenrieder Str. 279a 81377 München, Germany
T: +49 8974120210  +49 421 83570-170 (Service)
sales.de@goodwe.com
service.de@goodwe.com

**GoodWe (Netherlands)**
Franciscusdreef 42C, 3565AC Utrecht, the Netherlands
T: +31 (0) 30 737 1140
sales@goodwe.com
service.nl@goodwe.com

**GoodWe (India)**
1202, G-Square Business Park, Sector 30A, Opp. Sanpada
Railway Stn., Vashi, Navi Mumbai- 400703
T: +91 (0) 2249746788
sales@goodwe.com
service.in@goodwe.com

**GoodWe (Turkey)**
Adalet Mah. Megapol Tower K: 9 No: 110 Bayraklı - Izmir
T: +90 (232) 935 68 18
info@goodwe.com.tr
service@goodwe.com.tr

**GoodWe (Mexico)**
Oswaldo Sanchez Norte 3615, Col. Hidalgo, Monterrey,
Nuevo Leon, Mexico, C.P. 64290
T: +52 1 81 2871 2871
sales@goodwe.com
soporte.latam@goodwe.com


**www.goodwe.com**

Note: The technical data above mentioned may be modified in order to reflect the continuous technical innovation and the improvements achieved by GoodWe's R & D team. GoodWe has the sole right to make such modification at any time without further notice. The GoodWe's customers have the right to request the latest version of the GoodWe products data sheets and all the commercial contracts that may be signed will be based on the most recent version of the data sheet at the moment of signing the contract.




GoodWe-Brochure-20190221-EN-V4.0. Information may be subject to change without notice during product improving.