



GOODWE
YOUR SOLAR ENGINE

Power Whenever You Need

Residential Energy Storage Solutions

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)	4894	6650
	Max. DC Input Voltage (V)	580	
	MPPT Range (V)	125~550	
	Start-up Voltage (V)*3	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	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	21.7
	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)*5	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%	
	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*6	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: 4950VA for AS4777.2.

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

*6: 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)	3990	4894	6650
	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)		
	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 Frequency (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		
	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 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)	4894	6650* ⁴
	Max. Apparent Power Output (VA)* ⁵	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 (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)	
AC Output Data (Back-up)	Output THDi (@Nominal Output)	<3%	
	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 Frequency (Hz)	50/60 (±0.2%)	
	Max. Output Current (A)	16	22.8
PV String Input Data	Output THDv (@Linear Load)	<3%	
	Max. DC Input Power (W)	—	
	Max. DC Input Voltage (V)	—	
	Operating Voltage Range (V)* ⁸	—	
	Start-up Voltage (V)	—	
	Max. Input Current (A)	—	
DC Output Data	No. of PV String Input Connectors	—	
	Output Voltage during Daytime	—	
	Rated Output Voltage at Night (V)	—	
	Output Voltage Range (V)	—	
	Max. Output Current (A)	—	
Efficiency	No. of DC Output Connectors	—	
	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* ⁹	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	
Certifications & Standards	Topology	High Frequency Isolation	
	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 Output Frequency (Hz)	—
	Max. AC Current Output (A)	—
	Max. AC Current From Utility Grid (A)	—
	Output Power Factor	—
AC Output Data (Back-up)	Output THDi (@Nominal Output)	—
	Max. Output Apparent Power (VA)*3	—
	Peak Output Apparent Power (VA)*3	—
	Automatic Switch Time (ms)	—
	Nominal Output Voltage (V)	—
	Nominal Output Frequency (Hz)	—
	Max. Output Current (A)	—
PV String Input Data	Output THDv (@Linear Load)	—
	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
DC Output Data	No. of PV String Input Connectors	1
	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
Efficiency	No. of DC Output Connectors	1
	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
	Communication with BMS*5	RS485; CAN
	Communication with Meter	RS485
	Communication 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		GW5KL-ET	GW6KL-ET	GW8KL-ET	GW10KL-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)	6650	7980	10640	13300
	Max. DC Input Voltage (V)*	600			
	MPPT Range (V)	200~550			
	Start-up Voltage (V)	180			
	MPPT Range for Full Load (V)	240~550	285~550	260~550	320~550
	Nominal DC Input Voltage (V)	480			
	Max. Input Current (A)	12.5/12.5	12.5/12.5	12.5/22	12.5/22
	Max. Short Current (A)	15.2/15.2	15.2/15.2	15.2/27.6	15.2/27.6
	No. of MPP Trackers	2			
	No. of Strings per MPP Tracker	1/1	1/1	1/2	1/2
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	10000
	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%			
	AC Output Data (Back-up)	Max. Output Apparent Power (VA)	5000	6000	8000
Peak Output Apparent Power (VA)***		10000, 60sec	12000, 60sec	16000, 60sec	16500, 60sec
Max. Output Current (A)		8.5	10.5	13.5	16.5
Nominal Output Voltage (V)		400/380			
Nominal Output Frequency (Hz)		50/60			
Output THDv (@Linear Load)		<3%			
Efficiency	Max. Efficiency	97.6%			
	Max. Battery to Load Efficiency	97.5%			
	Euro Efficiency	96.8%			
	MPPT Efficiency	99.9%			
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	24	25	25
	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	AS/NZS 4777.2:2015			
	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



Easy WiFi setup via remote APP settings



Fanless design, long lifespan



Charge battery @ off-peak price



Project Cases

