

# ES Series

## Single Phase Hybrid Inverter (LV Battery)



Technical Data		GW3648D-ES	GW5048D-ES
<b>Battery Input Data</b>	Battery Type	Li-Ion	
	Nominal Battery Voltage (V)	48	
	Max. Charging Voltage (V)	≤60 (Configurable)	
	Max. Charging Current (A)	75	100
	Max. Discharging Current (A)	75	100
	Battery Capacity (Ah)*1	50~2000	
	Charging Strategy for Li-Ion Battery	Self-adaption to BMS	
<b>PV String Input Data</b>	Max. DC Input Power (W)	5000	6650
	Max. DC Input Voltage (V)	580	
	MPPT Range (V)	125~550	
	Start-up Voltage (V)*2	150	
	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	
<b>AC Output Data (On-grid)</b>	Nominal Apparent Power Output to Utility Grid (VA)	3680	4600
	Max. Apparent Power Output to Utility Grid (VA)	3680	4950
	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%	
<b>AC Output Data (Back-up)</b>	Max. Output Apparent Power (VA)	3680	4600
	Peak Output Apparent Power (VA)*3	5520,10sec	6900,10sec
	Max. Output Current (A)	16	20
	Nominal Output Voltage (V)	230 (±2%)	
	Nominal Output Frequency (Hz)	50/60 (±0.2%)	
<b>Efficiency</b>	Output THDv (@Linear Load)	<3%	
	Max. Efficiency	97.6%	
	Max. Battery to Load Efficiency	94.0%	
<b>Protection</b>	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	
<b>General Data</b>	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*4	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		
<b>Certifications &amp; Standards</b>	Topology	High Frequency Isolation	
	Grid Regulation	VDE-AR-N 4105, VDE0126-1-1, AS4777.2, G83/2, CEI 0-21, NRS 097-2-1, EN50438	VDE-AR-N 4105, VDE0126-1-1, AS4777.2, G59/3, 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, EN61000-4-16, EN61000-4-18, EN 61000-4-29	

\*1: Under off-grid mode, then battery capacity should be more than 100Ah.

\*2: When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V.

\*3: Can be reached only if PV and battery power are enough.

\*4: The standard configuration is CAN.