ES Series | Single-phase Energy Storage Inverter | 3,6kW / 5kW

The GoodWe ES series bi-directional energy storage inverter can be used for both on-grid and off-grid PV systems. During the day, the PV array generates electricity which can be provided either to the loads, fed into the grid or charge the battery, depending on the economics and set-up. The electricity stored can be released when the loads require it during the night. Additionally, the power grid can also charge the storage devices via the inverter.

Battery Input Data

Product Code	GW3648D-ES	GW5048D-ES
Battery Type	Li-Ion or Lead-acid*1	Li-Ion or Lead-acid*1
Nominal Battery Voltage	48V	48V
Max. Charging Voltage	≤60V (Configurable)	≤60V (Configurable)
Max. Charging Current*1	75A	100A
Max. Discharging Current*1	75A	100A
Battery Capacity*2	50 ~ 2000Ah	50 ~ 2000Ah
Charging Strategy for Li-Ion Battery	Self-adaption to BMS	Self-adaption to BMS

PV String Input Data

Max. DC Input Power	4600W	6500W
Max. DC Input Voltage	580V	580V
MPPT Range	125 ~ 550V	125 ~ 550V
Start-up Voltage*3	150V	150V
MPPT Range for Full Load	170 ~ 500V	170 ~ 500V
Nominal DC Input Voltage	360V	360V
Max. Input Current	11 / 11A	11 / 11A
Max. Short Current	13,8 / 13,8 A	13,8 / 13,8 A
No. of MPP Trackers	2	2
No. of Strings per MPP Tracker	1	1

AC Output Data (On-grid)

Nominal Apparent Power Output to Utility Grid	3680VA	4600VA
Max. Apparent Power Output to Utility Grid*4	3680VA	5100VA
Max. Apparent Power from Utility Grid	7360VA	9200VA
Nominal Output Voltage	230V	230V
Nominal Output Freqency	50 / 60 Hz	50 / 60 Hz
Max. Ac Current Output to Utility Grid	16A	24,5 x 5A
Max. Ac Current From Utility Grid	32A	40A
Output Power Factor	~1(Adjustable from 0,8 leading to 0,8 lagging)	
Output THDi (@Nominal Output)	<3%	<3%

AC Output Data (Back-up)

Max. Output Apparent Power	3680VA	4600VA
Peak Output Apparent Power*6	5520,10sec VA	6900,10sec VA
Max. Output Current	16A	20A
Nominal Output Voltage	230 (±2%) V	230 (±2%) V
Nominal Output Freqency	50/60 (±0,2%) Hz	50/60 (±0,2%) Hz
Output THDv (@Linear Load)	<3%	<3%

GOODWE
YOUR SOLAR ENGINE

- IP65
- Uninterruptible Power Supply
- Remote Upgrade
- 100A
- Export Control
- 30% PV Oversizing
- Monitoring via App and PC

Efficiency

Max. Efficiency	97,6%	97,6%
Max. Battery to Load Efficiency	94,0%	94,0%
Euro Efficiency	97,0%	97,0%

Protection

Anti-islanding Protection	Integrated	Integrated
PV String Input Reverse Polarity Protection	Integrated	Integrated
Insulation Resistor Detection	Integrated	Integrated
Residual Current Monitoring Unit	Integrated	Integrated
Output Over Current Protection	Integrated	Integrated
Output Short Protection	Integrated	Integrated
Output Over Voltage Protection	Integrated	Integrated

General Data

Operating Temperature Range	-25 ~ 60 °C	-25 ~ 60 °C
Relative Humidity	0 ~ 95%	0 ~ 95%
Operating Altitude	≤4000m	≤4000m
Cooling	Natural Convection	Natural Convection
Noise	<25 dB	<25 dB
User Interface	LED & APP	LED & APP
Communication with BMS[*7]	RS485; CAN	RS485; CAN
Communication with Meter	RS485	RS485
Communicaiton with Portal	Wi-Fi	Wi-Fi
Weight	28kg	30kg
Size	516 x 440 x 184mm	516 x 440 x 184mm
Mounting	Wall Bracket	Wall Bracket
Protection Degree	IP65	IP65
Standby Self Consumption	<13W	<13W
Topology	High Frequency Isolation	High Frequency Isolation

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