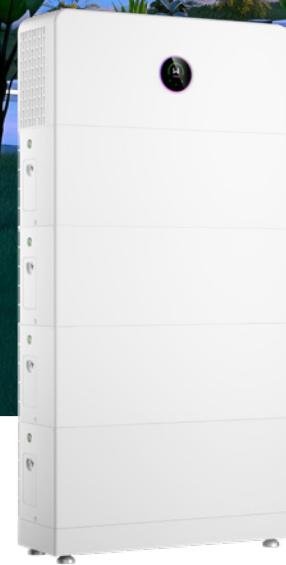


ESA Series

5-30kW/5-108kWh | Three Phase Energy Storage Solution (HV)

The GoodWe ESA Series 5-30kW/5-108kWh is a three-phase all-in-one energy storage solution that integrates the inverter, battery, and intelligent energy management into a single system. Its pre-wired, modular design unifies the inverter and battery, delivering an installation-friendly structure that streamlines setup and accelerates commissioning. With four battery module options-5, 6*, 8, and 9*kWh-up to 12 modules can be connected for a total storage capacity of 108kWh. Featuring simplified configuration, large expandable storage, and an AI-driven EMS for dynamic tariff optimization, the ESA Series 5-30kW/5-108kWh provides an efficient, flexible, and future-ready solution for both residential and small commercial use.

*: 6/9 kWh battery coming soon



Optimized Performance

- Up to 200% DC oversizing & AC backup overload
- Up to 1C charge/discharge for rapid energy cycling
- Smart fan cooling for quiet operation, noise <29dB*



Flexible & Adaptable Applications

- Dual-port design for whole-home backup
- Flexible battery mixing with different capacity or old & new batteries
- Supports on- and off-grid parallel operation



Superb Safety & Reliability

- Advanced 6-layer safety protection
- AI-driven AFCI 3.0 for safety
- Heating mode ensures reliable performance even in -20°C



Smart Control & Monitoring

- Ready for AI-driven EMS
- Seamless switching to backup <4ms
- One-click upgrade & one-click configuration

ESA Series / Power Module

GOODWE

Technical Data	GW5K- ETA-G20	GW6K- ETA-G20	GW8K- ETA-G20	GW9.99K- ETA-G20	GW10K- ETA-G20	GW12K- ETA-G20	GW15K- ETA-G20	GW20K- ETA-G20	GW25K- ETA-G20	GW29.99K- ETA-G20	GW30K- ETA-G20
Battery Side											
Battery Type											
Nominal Voltage (V)											750
Voltage Range (V)											700 ~ 950
Start-up Voltage (V)											720
Number of Battery Input											1
Max. Continuous Charging Current (A)	6.7	8.1	10.7	13.4	13.4	16.1	20.1	26.7	33.3	40.0	40.0
Max. Continuous Discharging Current (A)	7.4	8.9	11.8	14.7	14.7	17.7	22.1	29.4	36.7	44.1	44.1
Max. Charging Power (kW)	5.0	6.0	8.0	10.0	10.0	12.0	15.0	20.0	25.0	30.0	30.0
Max. Discharging Power (kW)	5.5	6.6	8.8	11.0	11.0	13.2	16.5	22.0	27.5	33.0	33.0
PV Side											
Max. Input Power (kW)	10	12	16	20	20	24	30	40	50	60	60
Max. Input Voltage (V) ¹											1000
MPPT Operating Voltage Range (V) ²											120 ~ 950
Start-up Voltage (V)											150
Nominal Input Voltage (V)											750
Max. MPPT Current (A)	21 / 21 / 21					21 / 21 / 21 / 21					21 / 21 / 42 / 42
Max. MPPT Short Circuit Current (A)	26 / 26 / 26					26 / 26 / 26 / 26					26 / 26 / 52 / 52
Number of MPPTs	3										4
Number of Strings per MPPT	1 / 1 / 1					1 / 1 / 1 / 1					1 / 1 / 2 / 2
AC Side (Grid Port)											
Rated Power (kW)	5	6	8	9.999	10	12	15	20	25	29.999	30
Max. Power (kW)	5	6	8	9.999	10	12	15	20	25	29.999	30
Rated Apparent Power to Grid (kVA)	5	6	8	9.999	10	12	15	20	25	29.999	30
Rated Apparent Power from Grid (kVA)	5	6	8	9.999	10	12	15	20	25	29.999	30
Max. Apparent Power to Grid (kVA) ³	5	6	8	9.999	10	12	15	20	25	29.999	30
Max. Apparent Power from Grid (kVA)	43.5 ⁴	43.5 ⁴	43.5 ⁴	43.5 ⁴	43.5 ⁴	43.5 ⁴	43.5 ⁴	43.5 ⁴	55.2 ⁵	55.2 ⁵	55.2 ⁵
Nominal Voltage (V)											220 / 380, 230 / 400, 3L / N / PE
Voltage Range (V) (According to local standard)											180 ~ 260
Nominal Frequency (Hz)											50 / 60
Frequency Range (Hz)											45 ~ 55 / 55 ~ 65
Rated Current to Grid (A)	7.6@380V	9.1@380V	12.2@380V	15.2@380V	15.2@380V	18.2@380V	22.8@380V	30.4@380V	37.9@380V	45.5@380V	45.5@380V
	7.3@400V	8.7@400V	11.6@400V	14.5@400V	14.5@400V	17.4@400V	21.8@400V	29.0@400V	36.3@400V	43.5@400V	43.5@400V
Rated Current from Grid (A)	7.6@380V	9.1@380V	12.2@380V	15.2@380V	15.2@380V	18.2@380V	22.8@380V	30.4@380V	37.9@380V	45.5@380V	45.5@380V
	7.3@400V	8.7@400V	11.6@400V	14.5@400V	14.5@400V	17.4@400V	21.8@400V	29.0@400V	36.3@400V	43.5@400V	43.5@400V
Max. Current to Grid (A) ⁶	7.6@380V	9.1@380V	12.2@380V	15.2@380V	15.2@380V	18.2@380V	22.8@380V	30.4@380V	37.9@380V	45.5@380V	45.5@380V
	7.3@400V	8.7@400V	11.6@400V	14.5@400V	14.5@400V	17.4@400V	21.8@400V	29.0@400V	36.3@400V	43.5@400V	43.5@400V
Max. Current from Grid (A) ⁶	63 ⁴	63 ⁴	63 ⁴	63 ⁴	63 ⁴	63 ⁴	63 ⁴	63 ⁴	80 ⁵	80 ⁵	80 ⁵
Power Factor											0.8 leading ~ 0.8 lagging
THDi											<3%
AC Side (Back-up Port)											
Rated Apparent Power (kVA)	5	6	8	10	10	12	15	20	25	30	30
Max. Apparent Power (kVA) ⁷	5.5(100, 10s), on-grid: 43.5	6.6(120, 10s), on-grid: 43.5	8.8(160, 10s), on-grid: 43.5	11.0(200, 10s), on-grid: 43.5	11.0(200, 10s), on-grid: 43.5	13.2(240, 10s), on-grid: 43.5	16.5(300, 10s), on-grid: 43.5	22.0(300, 10s), on-grid: 43.5	27.5(450, 10s), on-grid: 55.2	33.0(450, 10s), on-grid: 55.2	33.0(450, 10s), on-grid: 55.2
Nominal Voltage (V)											220 / 380, 230 / 400, 3L / N / PE
Nominal Frequency (Hz)											50 / 60
Max. Current (A) ⁷	Off-grid: 11.4, on-grid: 63	Off-grid: 13.7, on-grid: 63	Off-grid: 18.2, on-grid: 63	Off-grid: 22.8, on-grid: 63	Off-grid: 22.8, on-grid: 63	Off-grid: 27.3, on-grid: 63	Off-grid: 33.4, on-grid: 63	Off-grid: 33.4, on-grid: 63	Off-grid: 50.0, on-grid: 80	Off-grid: 50.0, on-grid: 80	Off-grid: 50.0, on-grid: 80
THDv (@Linear Load)											<3%
On / Off-grid Switching Time (ms)											<4
Efficiency											
Max. Efficiency	98.0%	98.0%	98.0%	98.1%	98.1%	98.1%	98.1%	98.1%	98.1%	98.2%	98.2%
European Efficiency	96.4%	96.9%	97.1%	97.2%	97.2%	97.2%	97.3%	97.3%	97.3%	97.4%	97.4%
Max. Battery to AC Efficiency											98.0%
Protection											
PV String Current Monitoring											Integrated
PV Insulation Resistance Detection											Integrated
Residual Current Monitoring											Integrated
PV Reverse Polarity Protection											Integrated
Battery Reverse Polarity Protection											Integrated
Anti-islanding Protection											Integrated
AC Overcurrent Protection											Integrated
AC Short Circuit Protection											Integrated
AC Overvoltage Protection											Integrated
DC Switch											Integrated
DC Surge Protection											Type II (Type I + II optional)
AC Surge Protection											Type II
Rapid Shutdown											Optional
AFCI											Optional
Remote Shutdown											Integrated
General Data											
Operating Temperature Range (°C)											-35 ~ +60
Relative Humidity											0 ~ 100%
Max. Operating Altitude (m)											4000 (>2000 derating)
Cooling Method											Smart Fan Cooling
User Interface											LED, WLAN + APP
Communication with BMS											CAN
Communication											RS485, WiFi + LAN + Bluetooth, 4G + Bluetooth (Optional)
Communication Protocols											Modbus-RTU, Modbus-TCP
Weight (kg)	34	34	34	34	34	34	34	34	38	38	38
Dimension (W x H x D mm)											800 x 340 x 270
Ingress Protection Rating											IP66
Mounting Method											Wall/Floor Mounted

*1: When the input voltage ranges from 950V to 1000V, the inverter will enter the standby mode, and the voltage returns to 950V to enter the normal operation state.
*2: Please refer to the user manual for the MPPT Voltage Range at nominal Power.
*3: According to the local grid regulation.
*4: GOODWE ESA series has internal bypass 63A passthrough ability to support whole home backup solution. If the customer doesn't want to do any breaker upgrade, the main breaker size in SolarGo(or SEMS+) can be set as previous breaker size.
*5: GOODWE ESA series has internal bypass 80A passthrough ability to support whole home backup solution. If the customer doesn't want to do any breaker upgrade, the main breaker size in SolarGo(or SEMS+) can be set as previous breaker size.
*6: If the backup port is not used, select an appropriate circuit breaker based on the AC maximum output current.
*7: "Off grid" means the energy of backup output only comes from PV and battery. "On grid" means the energy of the backup output includes the energy from grid or generator(on-grid) side.
*: Please visit GoodWe website for the latest certificates.

ESA Series / Battery Module

GOODWE

Technical Data	GW5.1-BAT-D-G20	GW8.3-BAT-D-G20	GW5.1-BAT-D-G21	GW8.3-BAT-D-G21
Rated Energy (kWh)	5.12	8.32	5.12	8.32
Usable Energy (kWh) ¹	5.0	8.0	5.0	8.0
Battery Type		LFP (LiFePO4)		
Operating Voltage Range (V) (single phase system)		350 ~ 550		
Operating Voltage Range (V) (three phase system)		700 ~ 950		
Max. Input Current (System) (A)	12.0	19.0	12.0	19.0
Max. Output Current (System) (A)	13.2	21.0	13.2	21.0
Max. Input Power (System) (kW) ²	5.0	8.0	5.0	8.0
Max. Output Power (System) (kW) ²	5.0	8.0	5.0	8.0
Peak Output Power (System) (kW) ²	7.5 @ 10s	12 @ 10s	7.5 @ 10s	12 @ 10s
Charging Temperature Range (°C)	-18 ~ +55	-18 ~ +55	+2 ~ +55	+2 ~ +55
Discharging Temperature Range (°C)		-20 ~ +55		
Relative Humidity		5 - 95%		
Max. Operating Altitude (m)		4000		
Noise Emission (dB)	≤29	≤29	≤29	≤29
Communication		CAN		
Weight (kg)	57.5 ± 1	79.0 ± 1	57.5 ± 1	79.0 ± 1
Dimensions (W x H x D mm)		800 x 326 x 270		
Optional Function Configuration	Heating (Optional)	Heating (Optional)	-	-
Ingress Protection		IP66		
Max. Storage Time		12 months (-20°C ~ 35°C) 6 months (35°C ~ 45°C)		
Scalability		12pcs		
Mounting Method		Floor stacked / Wall-mounted		
Standard and Certification	Safety EMC Transportation	IEC62619, IEC60730, EN62477, IEC63056, IEC62040, CE, CEC CE, RCM UN38.3, ADR		

*1: Test conditions, 100% DOD (cell 2.85 ~ 3.6V voltage range), 0.2P charge & discharge at 25 ± 2°C for battery system at the beginning of life. Usable energy is defined by its initial design value. Actual available energy may vary depending on charge / discharge rate, environmental conditions (e.g. temperature), transport and storage factors.

*2: Max. Input Power / Max. Output Power / Peak Output Power derating will occur related to Temperature and SOC.

*: Please visit GoodWe website for the latest certificates.