

The logo for enTrust microgrid features the word "enTrust" in a dark green, sans-serif font, with a stylized green leaf icon above the letter "t". Below it, the word "microgrid" is written in a smaller, lighter green, sans-serif font.

enTrust
microgrid

The slogan "You can trust!" is written in a white, cursive font inside a dark green, curved banner that overlaps the top of the house image.

You can trust !



EnSmartHome

Solar power day and night ...



EnSmartHome

Entrust Smart Home Microgrid – the best and most efficient way to use solar PV power in your home.

EnSmartHome automatically uses the cheapest and most available form of electricity thereby saving money on energy bills.

Through a top-quality Goodwe hybrid inverter and high performing CATL Lithium-Ion batteries, EnSmartHome maximises use of solar PV power and low tariff (night time) grid electricity in the home.

This provides many hours of freely, stored electricity to be used later in the day such as busy times in the evening – reducing electricity consumption from the grid and cutting energy bills even further.

EnSmartHome comprises of :

3.0kW Hybrid Inverter and 5kW battery storage, OR:

A 3kW hybrid inverter (GW3048-EM) with one battery pack 5.12kWh@51.2V and EnSmartESS Power Lite wall mounting kit (for single L051100-A Battery Pack) or

3.6kW Hybrid Inverter and 10kW battery storage

A 3.6kW hybrid inverter (GW3648-EM) with two battery packs 5.12kWh@51.2V and EnSmartESS Power Lite wall mounting kit (two units) or EnSmartESS Power Lite Plus wall mounting case (housing two L051100-A Battery Packs)

Featuring top quality specifications and manufacturing, EnSmartHome comes with a minimum 5-year warranty.



Entrust Microgrid EnSmartESS 10.24kWh@51.2V Specification



Technical Data		Specification
Battery Enclosure	Battery Type	LiFePO4
	Number of Battery Units	2 sets of L051100-A packs
	Nominal Battery Energy (kWh)	10.24 kWh
	Nominal Voltage (V)	51.2 V
	Working Voltage Range (V)	48-57.6 V
	Nominal Current (A) (Recommended)	50 A (0.5 C)
Battery Cell Specification	Cell	CATL LiFePO4 100Ah
	Nominal Voltage (V)	3.2 V
	Standard	UL1642, IEC62619, IEC62133, UL1973, UN38.3, GBT31485
Cable Specification	Battery Cable Rating	100 A
	Cable Size (mm ²)	25
General Data	Dimension [W*D*H](mm)	640*164*1000
	Weight (kg)	Approx. 115 kg
	Mounting	Wall, rear fixing
	Working Temp. Range	Charging 0 ~ 55°C; Discharging -20°C ~ 55°C
	Humidity	0-95% RH (non-condensing)
	Protection Level	IP54
	Communication	CAN/RS485/RS232/Dry Contact
	Certificate (L051100-A battery packs inside)	TUV/IEC 62619/CE-IEC 61000 IEC 62040/UN38.3
	Calendar Life	6000 cycles, 10 Years ¹

¹ Working Condition 0.5C @ 25°C, 80% DoD, 1 cycle per day, 30% capacity fading

EnTrust Microgrid EnSmartESS 5.12kWh@51.2V Specification



Technical Data		Specification
Battery Enclosure	Battery Type	LiFePO4
	Battery Pack	L051100-A
	Nominal Battery Energy (kWh)	5.12 kWh
	Nominal Voltage (V)	51.2 V
	Working Voltage Range (V)	48-57.6 V
	Nominal Current (A) (Recommended)	50 A (0.5 C)
Battery Cell Specification	Cell	CATL LiFePO4 100Ah
	Nominal Voltage (V)	3.2 V
	Standard	UL1642, IEC62619, IEC62133, UL1973, UN38.3, GBT31485
Cable Specification	Battery Cable Rating	100 A
	Cable Size (mm ²)	25
General Data	Dimension [W*D*H](mm)	530*440*132
	Weight (kg)	Approx. 50 kg
	Working Temp. Range	Charging 0 ~ 55°C; Discharging -20°C ~ 55°C
	Humidity	0~95% RH (non-condensing)
	Protection Level	IP20
	Communication	CAN/RS485/RS232/Dry Contact
	Certificate (L051100-A battery packs inside)	TUV/IEC 62619/CE-IEC 61000 IEC 62040/UN38.3
	Calendar Life	6000 cycles, 10 Years ¹

¹ Working Condition 0.5C @ 25°C, 80% DoD, 1 cycle per day, 30% capacity fading

Goodwe EM Series Single Phase Hybrid Inverter



Technical Data		GW3048-EM	GW3648-EM
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)*2	50~2000	
	Charging Strategy for Li-Ion Battery	Self-adaption to BMS	
PV String Input Data	Max. DC Input Power (W)	3900	4600
	Max. DC Input Voltage (V)*3	550	
	MPPT Range (V)	100~500	
	Start-up Voltage (V)	125	
	Min. Feed-in Voltage (V)*4	150	
	MPPT Range for Full Load (V)	280~500	170~500
	Nominal DC Input Voltage (V)	360	
	Max. Input Current (A)	11	11/11
	Max. Short Current (A)	13.8	13.8/13.8
	No. of MPP Trackers	1	2
	No. of Strings per MPP Tracker	1	
AC Output Data (On-grid)	Nominal Power Output to Utility Grid (W)	3000	3680
	Max. Apparent Power Output to Utility Grid*6 (VA)*6	3000	3680
	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
	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%	

	Technical Data	GW3048-EM	GW3648-EM
AC Output Data (Back-up)	Max. Output Apparent Power (VA)	2300	
	Peak Output Apparent Power (VA)* ⁸	3500,10sec	
	Automatic Switch Time (ms)	10	
	Nominal Output Voltage (V)	230 (±2%)	
	Nominal Output Frequency (Hz)	50/60 (±0.2%)	
	Max. Output Current (A)	10	
	Output THDv (@Linear Load)	<3%	
Efficiency	Max. Efficiency	97.6%	
	Max. Battery to Load Efficiency	94.5%	
	European 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
	Size (Width*Height*Depth mm)	347*432*175	
	Mounting	Wall Bracket	
	Protection Degree	IP65	
	Standby Self-Consumption (W)	<13	
	Topology	Battery Isolation	

*1: 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 3300W, GW3648-EM is 4050W, GW5048-EM is 5100W; for VDE-AR-N4105 GW5048-EM is 4600.

*7: 21.7A for AS4777.2.

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

*9: CAN communication is configured by default. If 485 communication is used, please replace the corresponding communication line.

*: Please visit GoodWe website for the latest certificates.



About Entrust Smart Home Microgrid Ltd

Entrust Smart Home Microgrid Ltd, specialises in smart microgrid systems that not only reduce energy consumption from the grid, particularly at peak hours, but also maximise the benefits from embedded solar PV and energy storage systems.

Based at Lancaster University, we are global leaders in the development of innovative microgrid and battery storage solutions.

As well as home microgrid systems, we also have solutions for businesses and industry – including a revolutionary new way of charging EV's (EnSmartEV) which uses similar technology to store and use electricity in the best and most efficient way possible.

Please visit our website at www.entrustmicrogrid.com

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