

enTrust
microgrid



EnSmartHome

Solar power day and night ...

EnSmartHome

Entrust 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 SAJ 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 :

3kW, 3.6kW or 5kW Hybrid Inverter and modular battery storage in 5.12kWh units which when combined together can provide battery storage at 10kWh, 15kWh or even 20kWh. EnSmartHome can also be provided with our smart microgrid controller to further optimise energy use and efficiency savings.

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



EnTrust Microgrid
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5.12 kWh@51.2V



Technical Data		Specification
Battery Pack	Battery Type	LiFePO4
	Number of Battery Units	1P16S
	Nominal Battery Energy (kWh)	5.12 kWh
	Nominal Voltage (V)	51.2 V
	Working Voltage Range (V)	44.8-57.6 V
	Nominal Current (A) (Recommended)	50 A (0.5 C)
Cell Specification	Cell	GOTION 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)	440*480*133
	Weight (kg)	Approx. 50 kg
	Mounting	Cabinet
	Working Temp. Range	Charging 0 ~ 55°C; Discharging - 20°C ~ 55°C
	Humidity	0~95% RH (non-condensing)
	Protection Level	IP54
	Communication	CAN/RS485
	Certificate (L051100-A battery packs inside)	CE-IEC 61000 /UN38.3
	Calendar Life	6000 cycles, 10 Years

Entrust Microgrid
Inverter
SAJ H1-3K-S2



Model: H1-3K-S2**PV input parameter**

Input voltage range	80~600 Vd.c.
Input voltage range (Full load)	250~550 Vd.c.
Rated input voltage	360 Vd.c.
Maximum input voltage	600 Vd.c.
Maximum input current	12.5 Ad.c. * 2
PV I _{SC}	15 Ad.c. * 2

Battery input / output parameter

Input voltage range	42~58.4 Vd.c.
Rated voltage	48 Vd.c.
Maximum input / output voltage	58.4 Vd.c.
Maximum input / output current	60 Ad.c.

Grid parameter

Rated voltage	230 Va.c.
Rated frequency	50 Hz
Rated input / output current	13.1 Aa.c.
Maximum continuous input / output current	13.6 Aa.c.
Rated output active power	3 kW
Power factor	0.9 leading to 0.9 lagging

Back-up parameter

Rated output voltage	230 Va.c.
Rated output frequency	50 Hz
Maximum output current	13.6 Aa.c.
Maximum output active power	3 kW

General

Protection class	Class I
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**Entrust Microgrid
Inverter**
SAJ H2-5K-S2



MODEL H2-5K-S2**DC Input**

Max. PV Array Power [Wp]@STC	7500
Max. DC Voltage [V]	550
MPPT Voltage Range [V]	90~500
Rated DC Voltage [V]	360
Start Voltage [V]	100
Max. DC Input Current [A]	16/16
Max. DC Short Circuit Current [A]	19.2 / 19.2
No. of MPPT	2
No. of Strings per MPPT	1/1

Battery Parameters

Battery Type	Lithium battery
Battery Voltage Range [V]	85~450
Rated Charging/ Discharging Current [A]	30/30
Rated Charging/ Discharging Power [W]	3000 3680 4000 5000 6000

AC Output [On-grid]

Rated AC Power [W]	5000
Rated Apparent Power [VA]	5500
Rated AC Current [A]@230Vac	21.7
Max. AC Current [A]	25
Rated AC Voltage	L/N/PE, 220/ 230V
Rated Output Frequency [Hz]	50/ 60 ±5
Power Factor [cos φ]	0.8 leading~0.8 lagging
Total Harmonic Distortion [THDi]	<3%

AC Output [Back-up Mode]

Rated Output Power [VA]	5000
Max. Output Current [A]	22.7
Rated Output Voltage	L/N/PE, 220/ 230V
Rated Output Frequency [Hz]	50/ 60 ±5
Output THDv (@ Liner Load)	<3%
Peak Output Apparent Power [VA]	6000, 60s

Efficiency

Max. Efficiency	97.6%
Euro Efficiency	97.0%
Max. Battery Charging/ Discharging Efficiency	96.6%

MODEL H2-5K-S2**Protection**

AC Short Circuit Protection	Integrated
Overload Protection	Integrated
Residual Current Monitoring Unit	Integrated
Battery Input Reverse Polarity Protection	Integrated
Anti-islanding Protection	Integrated
AC Surge Protection	Type II
DC Surge Protection	Type II
AFCI	Optional

Interface

PV Connection	MC4
Battery Connection	Quick connector
AC Output	Plug-in connector
Display	LED+APP (Bluetooth)
Communication Port	CAN+RS485+DRM+CT+RS232
Communication	Wi-Fi/ Ethernet/ 4G(Optional)/ PLC(Optional)

General Data

Topology	Transformerless
Operating Temperature Range	-40°C to +60°C
Cooling Method	Natural convection
Ambient Humidity	0%~100% non-condensing
Altitude	4000m (>3000m power derating)
Noise [dBA]	<25
Ingress Protection	IP65
Mounting	Rear panel
Dimensions [H*W*D] [mm]	380.5*519*193.5
Weight [kg]	18.5
Warranty [Year]	5/10/15/20/25
Applicable Standard	CEI 0-21, VDE4105-AR-N, VDE0126-1-1, EN50438, G98, G99, EN50549, AS4777.2 IEC62109-1&-2, EN61000-6-1/2/3/4



Entrust Microgrid Ltd, specializes in smart microgrid systems that not only reduce energy consumption from the grid, particularly at peak hours, but also maximize 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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