



Product Specifications

Power Base MAX15050D

HV Energy Storage System

Version	Prepare	Check	Approve	Date
V1.0	ZJM			2021-04-03



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5.	Product Application	错误!未定义书签。



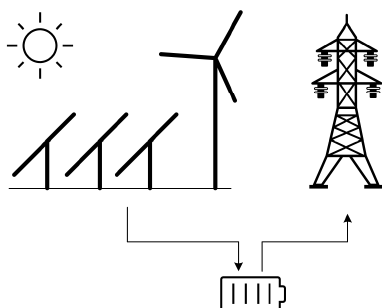
1. Product Overview

Power Base Max15050D is a new high voltage lithium-iron phosphate battery storage system under the self-research and development procedure of GARAYE, consisting of high efficient photovoltaic controller (100kW), long-life cycle lithium iron phosphate battery pack (150kWh) and EMU (50kW). It can be applied to match with any arbitrary PCS. The battery pack can be able to be expanded anytime and anywhere so that the availability of either old or new battery can be improved. And it can match the photovoltaic inverter to achieve power generation energy storage.

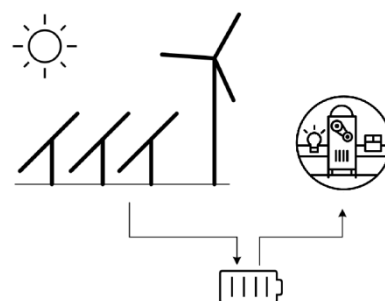
2. Product Characteristics

- The energy storage system is equipped with IP55 protection and constant temperature function of air conditioning, which is suitable for typhoon coastal areas;
- The charging unit of the energy storage system is designed with high efficiency, high power density and lightweight hardware architecture. The photovoltaic controller is equipped with short-circuit, open-circuit and attenuation prediction functions of PV panels, and dynamic MPPT self-adaptive learning and optimization functions. The range of MPPT input voltage is 300Vdc ~ 850Vdc, which can meet more application scenarios;
- The output configuration of the energy storage system is composed of an efficient EMU module (50KW), and the output voltage range is:300Vdc~860Vdc It can support 63 systems in parallel, and realize the requirements of battery capacity expansion anytime and anywhere and the mixing of old and new systems;
- A wide range of adjustable output voltages can be achieved to match the parameters and protocols of most PCS and photovoltaic inverters on the market;
- The energy storage unit adopts lithium iron phosphate battery pack with high safety and long life;
- The system has built-in BMS management system, which can effectively monitor and manage the battery module and the system to ensure safe and reliable operation;
- The system has remote intelligent monitoring, which can realize the whole life cycle of products and services from installation and deployment, system operation, intelligent operation and maintenance, statistical analysis and fault repair

3. Application



PV Micro-grid

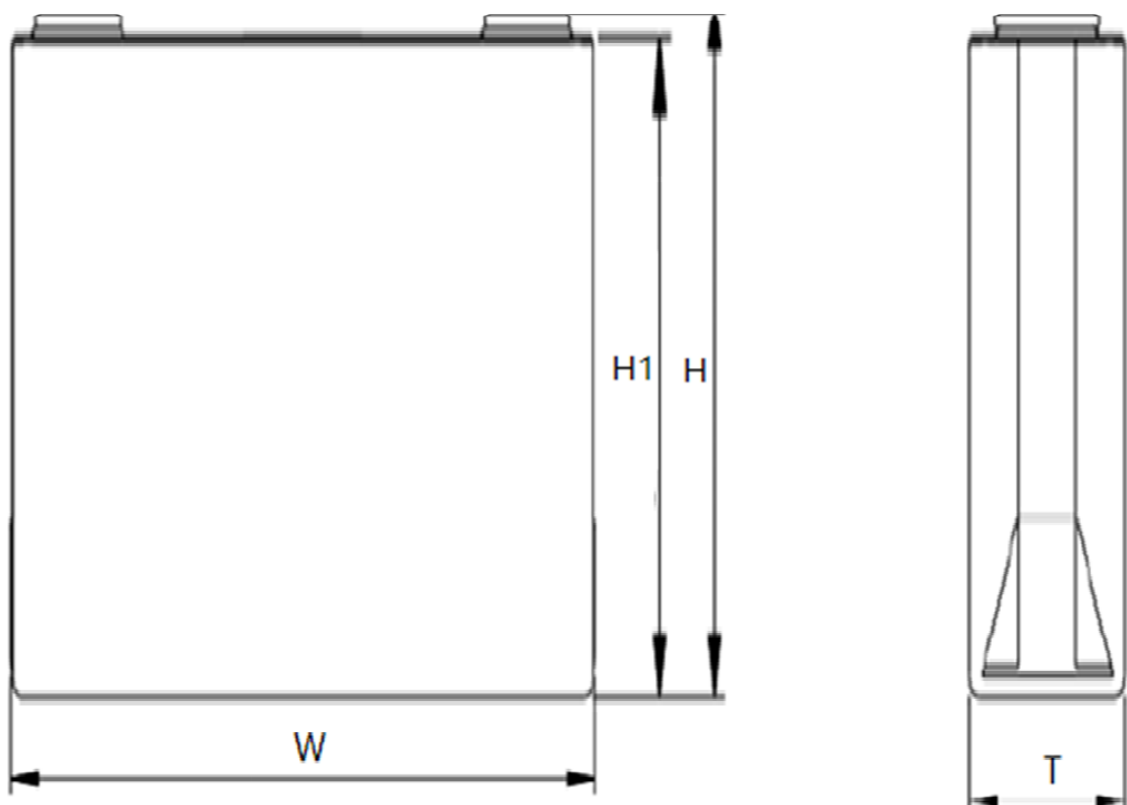


Customer Self Supply



4. Specifications

4.1. Cell Parameters





No.	Items		Parameters
1	Cell Type		LiFePO4 Prismatic
2	Nominal Voltage		3.2V
3	Nominal Capacity		280Ah
4	Maximum Charge Current	Continuous	280A
5		Peak for 30s SOC≤80%	560A
6	Maximum Discharge Current	Continuous	280A
		Peak for 30s SOC≤80%	560A
7	Dimensions	T	71.55±1.5mm
		W	173.93±0.3mm
		H	207.23±0.5mm
		H1	204.59±0.5mm
8	Weight		5.34±0.15kg
9	Temperature Range	Charging	0°C ~ 55°C
		Discharging	-20°C-55°C
		Recommended Working	15°C ~ 35°C

4.2. Battery Module Parameters



No.	Items	Parameters
1	Model	ZR-FS24280-08ISR1
2	Cell Configuration	8S1P
3	Nominal Capacity	280Ah
4	Nominal Energy	7168Wh
5	Weight (Approx.)	52kg
6	Dimensions (W*D*H)	206*725*222±2mm



4.3. Lithium Battery System Parameters

No.	Items		Parameters
1	Model		ZR-FS537280-168S
2	Nominal Capacity		280Ah&150kWh
3	Chemistry		LiFePO4
4	Battery Module QTY		21
5	Voltage	Nominal(V)	537.6
		Recommend Charging(V)	596
		Max. Charging(V)	613
		Discharge Cut-off(V)	492
6	Current	Max. Charging(A)	280
		Max. Discharging(A)	280
		Peak for 10s(A)	300
7	Communication		CAN、RS485、RS232

4.4. System Parameters



4.4.1. General Specifications

No.	Items		Parameters
1	Main Control Module		GR-MC650-300M
2	Lithium Battery System		GR-FS537280-168S
3	Input	Maximum PV Array Voltage (V)	1100
		MPPT Voltage Range (V)	300~850
		Maximum Number Of Parallel PV Array Inputs	16
		Rated Branch Current(A)	12
		Maximum Branch Current(A)	13
4	DC-DC	Voltage Range (Vdc)	300~860

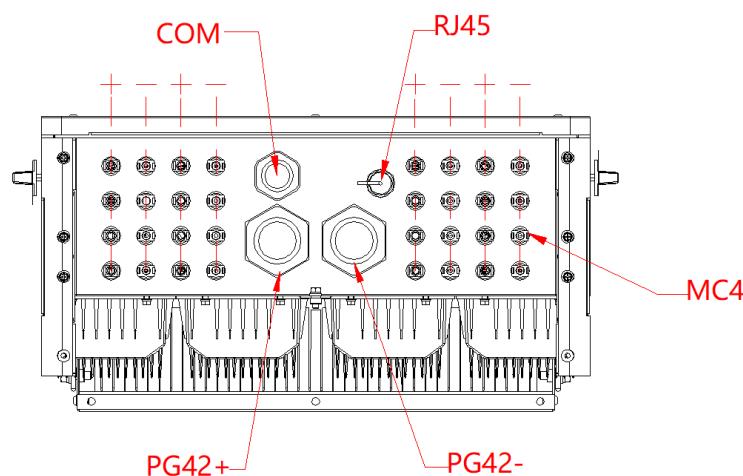


	Output	Current Range (A)	0-25*4
		Rated Current (A)	20*4
		Maximum load power	60kW
		Voltage Regulation Accuracy	$\leq \pm 0.5\%$ (300Vdc~860Vdc, 0~20MHz)
		Precision Of Steady Current	$\pm 1\%$ (output load 20% ~ 100% of the rated range)
		Load Regulation	$\leq \pm 0.5\%$
		Start overshoot	$\leq \pm 3\%$
5	Weight (Approx.)		1500kg
6	Dimensions (L*H*W))		1115 x 2070 x 1276 mm
7	Communication		RS485, CAN
8	Cycle Life		4000 times@80%DOD
9	Designed Calendar Life		≥ 10 years
10	Safety Function		Over-charge, Over-discharge, Over-current, Low/High-temperature, Low-voltage, Short-circuit Protections
11	Parallel Capability		Maximum 10 units (Recommended 6 units)
12	Level Of Protection		IP55
13	Cable Outlet		Bottom

4.4.2. Environment Specifications

No.	Items	Parameters
1	Charging Temperature Range	$0^{\circ}\text{C} \sim 45^{\circ}\text{C}$
2	Discharging Temperature Range	$-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$
3	Best Operating Temperature Range	$15^{\circ}\text{C} \sim 35^{\circ}\text{C}$
4	Storage Temperature Range	$-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$
5	Humidity	5%RH~95%RH
6	Altitude	0~4000m

4.4.3. Input port definition

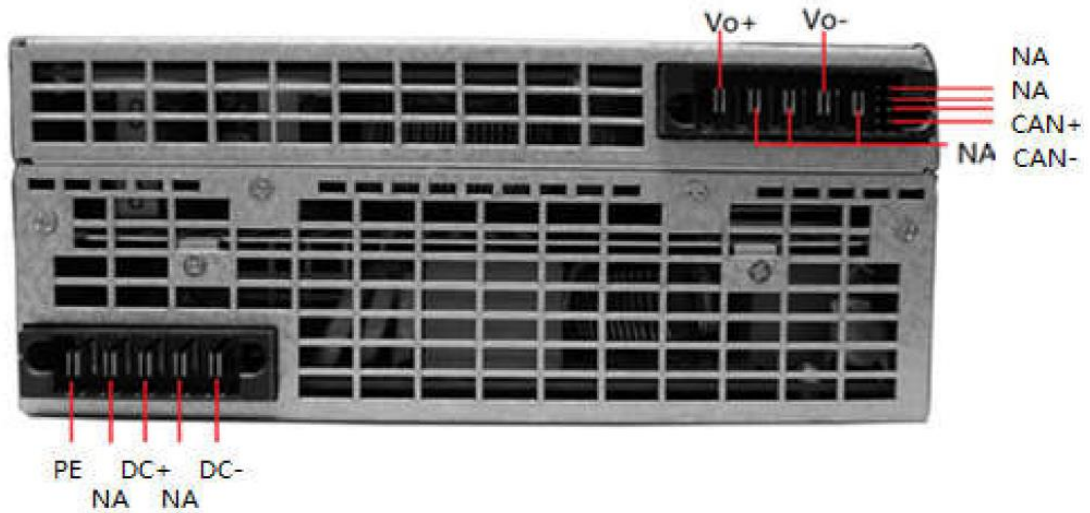


No.	Items	Instructions
1	COM	Communication Port
2	RJ45	Communication Port
3	PG42+	Lithium battery system "Positive pole"



4	PG42-	Lithium battery system “Negative pole”
5	MC4	Connected photovoltaic arrays(16 way)

4.4.4. Output port definition



No.	Items	Instructions
1	PE	GND Ground
2	DC+	PV Inverter “Positive pole”
3	DC-	PV Inverter “Negative pole”
4	Vo+	Lithium battery system “Positive pole”
5	Vo-	Lithium battery system “Negative pole”
6	CAN	Lithium battery system communication

5. Electrical Schematic

