



20KW/40KWh Energy Storage Cabinet

20KW/40KWh Energy Storage Cabinet adopts steel 42U standard cabinet (the bottom surface is 600mm×1200mm) as the body, consists of 38KW on-grid PCS modules, 20KW PV charger module and 40KWh lithium iron phosphate battery modules with high performance and high safety, applicable to the occasions of energy storage, power regulation and frequency modulation; Many machines can be in parallel to realize capacity expansion; it can form into micro-grid system with other generating equipment, coordinate and match the output power of each generating device according to the load demand.



- Energy storage system of cabinet type can be direct connected with PV solar panel, and store the electricity generated to the energy storage batteries or through the conversion by PCS provide it to load or feedback the grid;
- When the grid is black out, it can convert the electricity generated by the solar energy through PCS to be provided to the load and store the excess electricity into the energy storage batteries;
- When at night or there is no sufficient sunshine and when the grid is black out, the load can be provided by the electricity in the energy storage batteries;
- As the control and energy center, micro-grid is constructed in the areas with no electricity to provide stable and continuous electricity.

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Energy storage system reserves the power access ports of diesel generator, or other generating equipment; when the solar energy or battery energy storage is sufficient, energy storage cabinet provides electricity to load, when the solar power is not enough, energy battery shall supplement the

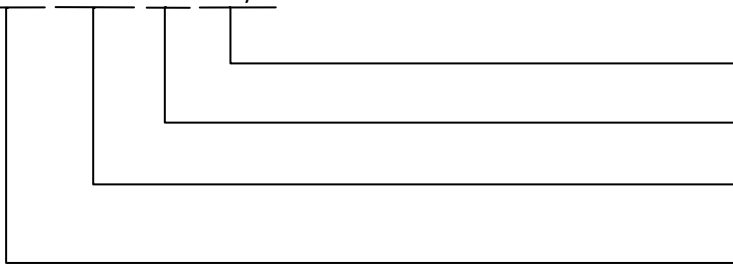


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shortage; when the solar energy generation is not sufficient to meet the shortage of load and battery energy storage, diesel generator and other generating devices are controlled to start, and through controlling switch, power supply shall be switched to diesel generator or other generating devices; when the diesel generator starts, energy storage cabinet shall entered into on-grid operation mode on the basis of diesel or other generating equipment, which using PV generating capacity of its own to provide electricity to load in order to decrease the diesel generating output. Energy storage system can coordinate and match the power of PV charger, PCS, diesel generator and other generating devices according to the load demand.

一、 Naming Rule

DESSM-P20B40-C20-220/60



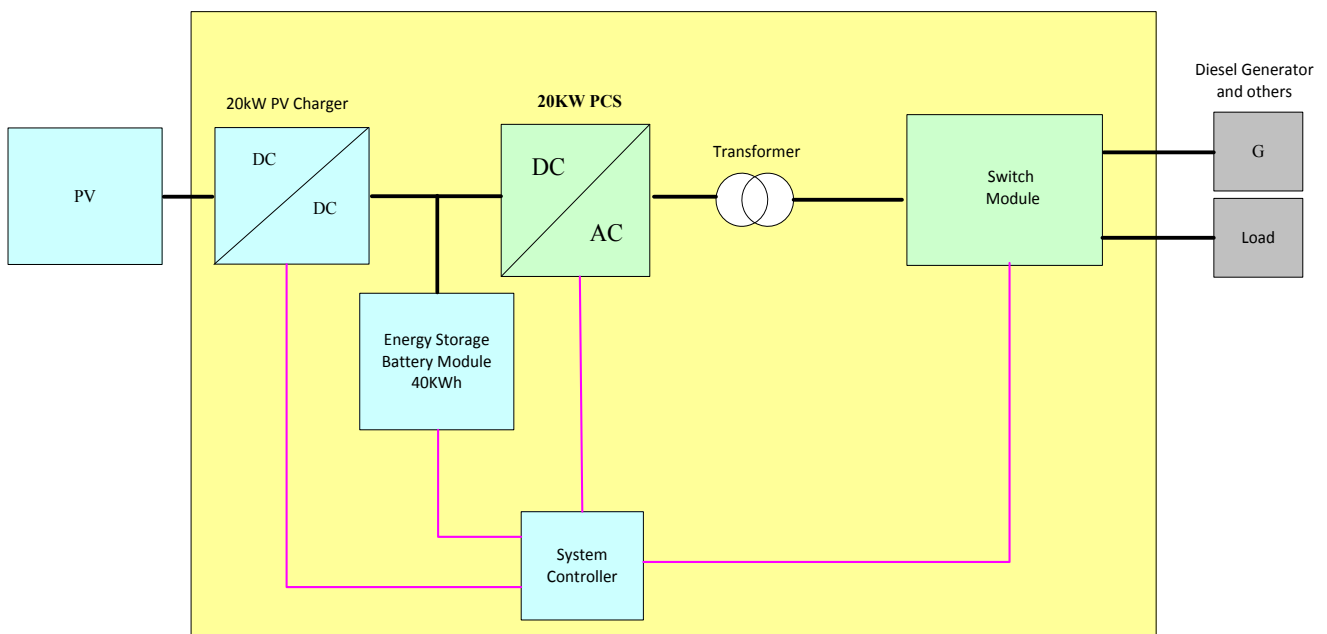
220: the voltage and frequency nominal value of input or connected grid line

C20: the power of photovoltaic charger is 20KW

P20B40: the power of PCS is 20KW, and the capacity of energy storage batteries is 40KWh

DESS: the English abbreviation of Distributed Energy Storage System; M:modularity

二、 System Principle Diagram





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三、Performance Feature

- Modular design, easy and convenient for installation and maintenance;
 - On-grid and off-grid operation, multiple machines that combined to expand capacity are supported.
 - Micro-grid control function can be as the micro-grid center to coordinate and match PV charger, PCS and other generating equipment connected according to the load demand;
 - Lithium iron phosphate batteries with high performance and high safety;
- Battery system protection functions such as on-line equilibrium BMS, over-voltage and under-voltage, over-temperature and under-temperature, over-current and etc;

四、Specification

Type		P20B40-C20-220/60	P20B40-C20-380/50	P20B40-C20-400/50	P20B40-C20-480/60
System Parameter	Nominal Power	20KW	20KW	20KW	20KW
	Energy Storage Capacity	40KWh	40KWh	40KWh	40KWh
	Output Voltage	220V/Three-phase/60HZ	380V/ Three-phase /50HZ	400V/ Three-phase /50HZ	400V/ Three-phase /50HZ
	AC Phase	Three-phase Four-line +PE	Three-phase Four-line +PE	Three-phase Four-line +PE	Three-phase Four-line +PE
	Voltage Range Connected by PV	250V~350V	250V~350V	250V~350V	250V~350V
	Operation Mode	On-grid Operation; Off-grid Operation; Micro-grid Operation	On-grid Operation; Off-grid Operation; Micro-grid Operation	On-grid Operation; Off-grid Operation; Micro-grid Operation	On-grid Operation; Off-grid Operation; Micro-grid Operation
	DC/DC Power	20KW	20KW	20KW	20KW
	Energy Storage Capacity	40KWh	40KWh	40KWh	40KWh
	Communication Interface	RS485	RS485	RS485	RS485



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	Cabinet Protection Grade	IP20 (Indoors)	IP20 (Indoors)	IP20 (Indoors)	IP20 (Indoors)
	Environment Temperature	-10~+50℃	-10~+50℃	-10~+50℃	-10~+50℃
	Relative Humidity	(No Condensation)	(No Condensation)	(No Condensation)	(No Condensation)
	Max. Altitude	3000m	3000m	3000m	3000m
	Over-load Capability	1.1 times 1min,1.2 times 10s	1.1 times 1min,1.2 times 10s	1.1 times 1min,1.2 times 10s	1.1 times 1min,1.2 times 10s
PCS Parameter	Nominal Power	20KW	20KW	20KW	20KW
	Nominal Current	55A	55A	55A	55A
	Nominal Frequency	60HZ	50HZ	50HZ	60HZ
	Allowable Frequency Range	57~60.5HZ	49.5~50.5HZ	49.5~50.5HZ	57~60.5HZ
	Max. Efficiency	97.50%	97.50%	97.50%	97.50%
	Power Factor	-1~1	-1~1	-1~1	-1~1
	THD(On-grid Operation)	<3% (Nominal Power)	<3% (Nominal Power)	<3% (Nominal Power)	<3% (Nominal Power)
	THD(Off-grid Operation)	<5% (Nominal Power)	<5% (Nominal Power)	<5% (Nominal Power)	<5% (Nominal Power)
	Cooling Method	Forced Air Cooling	Forced Air Cooling	Forced Air Cooling	Forced Air Cooling
	On-off Grid Operation Supported	√	√	√	√
	Short-circuit Protection	√	√	√	√
	Over-load Protection	√	√	√	√
	AC Over-voltage Protection	√	√	√	√
	DC Over-voltage and Under-voltage Protection	√	√	√	√
	Grid Monitoring	√	√	√	√
Insulation Monitoring	√	√	√	√	
Over-temperature Protection	√	√	√	√	



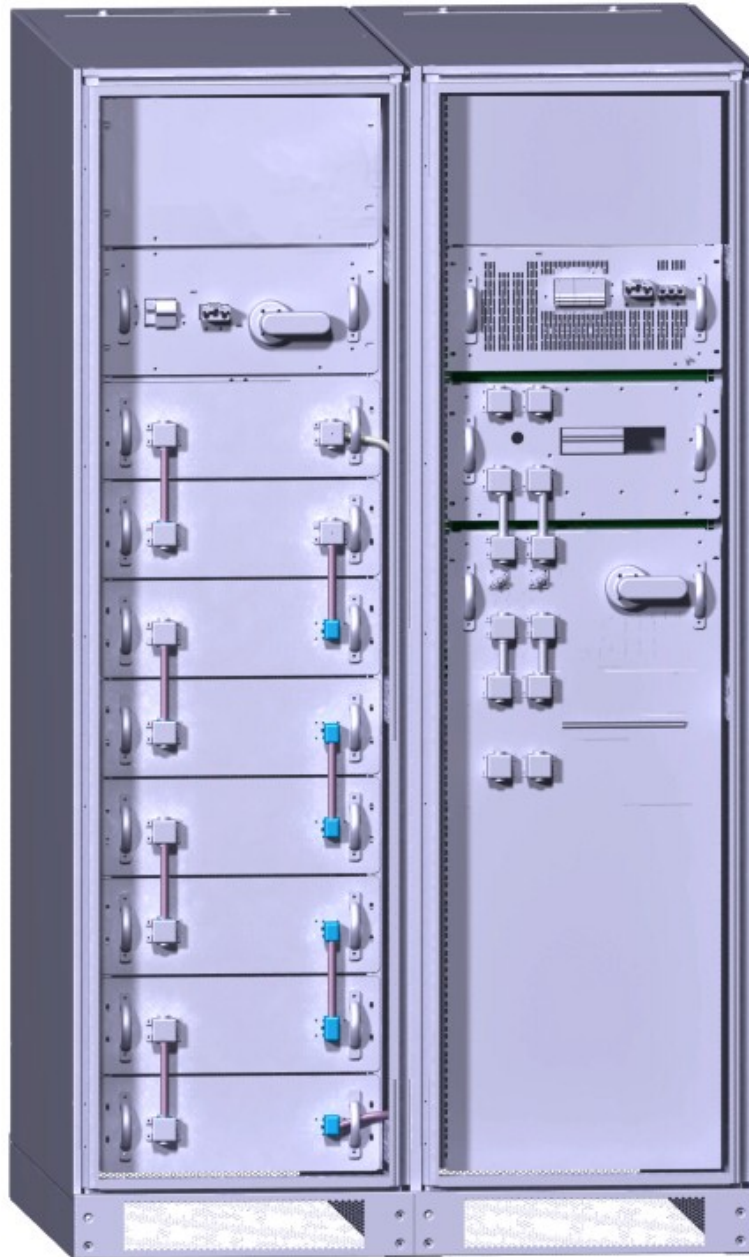
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PV Charger Parameter	Nominal Power	20KW	20KW	20KW	20KW
	Cooling Method	Forced Air Cooling	Forced Air Cooling	Forced Air Cooling	Forced Air Cooling
	MPPT Function	√	√	√	√
	Over-voltage Protection	√	√	√	√
	Under-voltage Protection	√	√	√	√
	Over-current Protection	√	√	√	√
	Short-circuit Protection	√	√	√	√
	Low-temperature Protection	√	√	√	√
	Over-temperature Protection	√	√	√	√
Energy Storage Battery Parameter	Nominal Voltage	409.6V	409.6V	409.6V	409.6V
	Energy Storage Capacity	40KWh	40KWh	40KWh	40KWh
	BMS On-line Equilibrium	√	√	√	√
	Over-voltage Protection	√	√	√	√
	Over-voltage Protection	√	√	√	√
	Over-current Protection	√	√	√	√
	Short-circuit Protection	√	√	√	√
	Low-temperature Protection	√	√	√	√
	Over-temperature Protection	√	√	√	√
	Insulation Detection	√	√	√	√



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五、 Internal Design Sketch



Each set of energy storage cabinet system consists of 2 cabinets, one is for installation of energy storage battery module, DC/DC (photovoltaic charger) module, BMS module; the other one is for installation of transformer, PCS and output switch module.



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六、Dimension Parameter

