

■ Introduction

In order to meet Energy storage market requirement, BYD successfully developed 630kVA modularized PCS (Power Conversion System) which use the most advanced three-level inverter technology and modular structure design. It is mainly used for energy conversion, power- and frequency regulating function and with high conversion efficiency, low output harmonic containing rate, big permissible working environment temperature range. The compact design of PCS also makes maintenance easier, humanized touch screen operation interface helps operation in site and querying information more convenient. Remote monitoring system can be used to inspect and modify the system settings with fast the maintenance response.



Figure 1: Picture of 630kVA modularized PCS

■ The principle of system

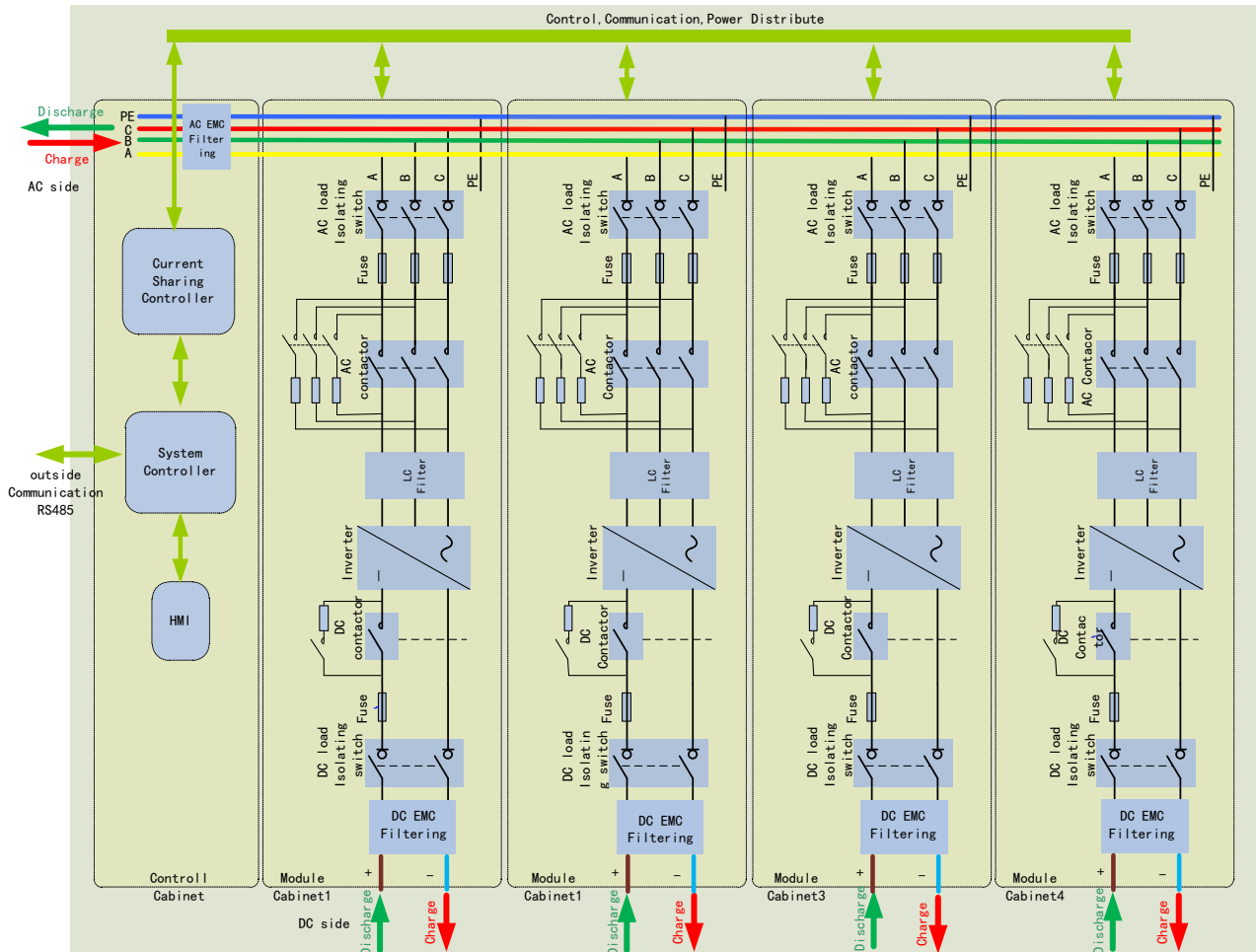


Figure 2: The principle of system

■ System Parameter

No.	Type	BEM630KTL-E-R1	Remark
DC Side Parameter			
1	DC Voltage	650~850Vdc	
2	Max. DC Current	1020A	
3	DC Max. input current for each way	255A	
AC Side Parameter			
4	Nominal AC Voltage	400Vac	
5	Voltage Range	360Vac~440Vac	
6	Max. AC Current	960A	
7	Nominal Power	630kVA	
8	Nominal Grid Frequency	50Hz	
9	Grid Frequency Range	48~50.5Hz	
10	Power Factor	0.9 (leading) ~0.9 (lagging)	
11	THD	<3%	@Nominal Power
12	Active Power Accuracy	±2kW	
13	Reactive Power Accuracy	±3kvar	
14	Response Time	Within 200ms	
<input type="checkbox"/> System Parameter			
15	Insulation Method	Without Transformer	
16	Max. Efficiency	98.70%	
17	Enclosure Protection Grade	IP20 (Indoor)	
18	Permissible Environment Temperature	-25~+50℃	
19	Permissible Humidity	5~95%	No condensing
20	Permissible Altitude	6000m	Derating above 3000m
21	Noise	<70Db	
22	Cooling Method	Smart Forced Wind Cooling	
23	Self-consumption at night	<80W	

BEM630KTL-E-R1

630kVA PCS Specification

23	External power source consumption	2kVA	
24	Fresh Air Consumption	4000m ³ /h	
26	Display	Touch Screen	
27	Communication Interface	RS485/CAN	
28	Dimension (W×D×H)	2000mm×600mm×2000mm	
29	Weight	1400kg	
Protect Function			
30	Short Cut Protection	√	
31	Over Load Protection	√	
32	DC Over/Under Voltage Protection	√	
33	Grid Monitoring	√	
34	Over Temperature Protection	√	
35	Direct Current Electrode Positive Protection	√	
36	Island Protection	Active and passive detection	
Reference standards and certification			
37	EMC	EN61000-6-2	
38		EN61000-6-4	
39	Safety	EN62477-1	
40	Certification	CE, G59	

■ Performance Characteristics

- Wide DC input voltage range, the highest voltage is up to 1000V
- Maximum efficiency is as high as 98.7%
- Small current harmonic
- 100% power sustainable operation under 50 °C ambient temperature
- Thin film capacitor design improve the service life of the system
- Modular design, easy to maintenance

■ Application

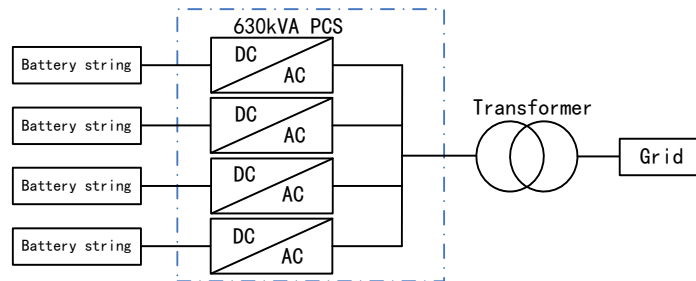


Figure 3: Topology of system

■ External interface description

No.	Name	Description	Interface	Remark
1	DC Input	Voltage Range 650-850V	16	4 Way in Each Modular Cabinet
2	AC Output	3phase3line AC400V/50Hz	1	AC output, 2 aperture, aperture diameter: 13mm
3	Distribution Interface	AC230V/50Hz	2	One way control circuit power supply, One way non control circuit power supply
4	Communication Interface	RS485/CAN	1	Recommended Cable 2*20AWG
5	Grounding Interface	Cabinet Grounding Interface	1	1 aperture, aperture diameter: 13mm