

GZG62

型智能型高频开关电源直流柜 Intellectual High Frequency Switching DC Power Panel



产品概述

GZG62 型智能型高频开关电源直流柜是按照电力部订货技术条件 DL/T459 及 GB 19826 电力工程直流电源设备通用技术条件及安全要求，结合多年的直流电源系统的研制及制造经验而开发的新一代无人值守电源系统。它综合了高频开关技术和计算机技术，功率输出单元采用模块化 (N+1) 设计，显示操作单元采用新型人机界面触摸屏，可带电热插拔等优点。具有“遥控、遥测、遥信、遥调”功能，是新型的高品质直流操作电源。适用于 500kV 及以下变电站、发电厂等无人值守场所。

环境条件

1. 周围环境温度：上限 +50℃，下限 -10℃；
2. 海拔不超过 2000m；
3. 环境温度：月平均相对湿度不大于 90%
日平均相对湿度不大于 95%；
4. 地震烈度不大于 8 度；
5. 无火灾、爆炸危险、严重污秽、化学腐蚀及剧烈震动的场所；
6. 安装地点：户内；
7. 安装方式：地脚螺栓、焊接。

Product Summary

This new type intellectual high frequency switching DC power supply is developed and produced according to DL/T459 ordering technical specification, which issued by electric power ministry, GB 19826, common technical specification of electric power system DC power supply's development and manufacture. It combines HV switching technique with computer ones, its power units adopt modularized (N+1) redundant design, its monitoring unit will use PLC controller and computer with high performance and high operating speed, its display unit featured by modern touch screen with human-computer interface, and its elements are PNP design. It becomes a modern, high quality DC power supply because of its "Remote Control", "Remote Measurement", "Remote Communication" and "Remote Adjusting" excellent functions. It can be applied to operating condition free of watchers in transformer substations and generators with 500kV capacity and the below.

Environmental Conditions

1. Ambient temperature: No more than +40℃, No less than -10℃, Average temperature no more than +50℃.
2. Altitude: No more than 2000m.
3. Relative Humidity: Average humidity no more than 95% within one day, Average humidity no more than 90% within one month.
4. Earthquake Intensity: No more than 8 degrees.
5. No fire, explosion danger, serious dirt, chemical corrosion and violent vibration for product installed place.
6. Install Site: Indoor installation.
7. Method of Install: anchor bolts and welding.

产品特点

1. 显示操作单元：智能型高频开关电源直流柜采用新型 PMS 智能型人机界面触摸屏。操作界面直观，可方便地设置系统的运行参数。多达 255 幅参数画面可显示系统所有运行参数，包括各单体电池（组）的电压参数。先进的显示屏触摸操作方式替代了传统的按钮操作，进一步提高了系统的可靠性。
2. 交流配电单元：采用 2 路交流电源进线方式，用户可按实际情况接入 1 路或 2 路进线。系统按第 1 路进线优先供电的原则，将交流电分配给各功率模块。
3. 功率输出单元：选用德国 Benning 原装进口高频开关电源模块或国产高频开关电源模块，采用 N+1 模式设计，个别模块故障后，将自动退出运行，不影响系统的正常运行。提高了整个系统的可靠性。模块可带电热插拔，使维护工作极其简便。高频开关电源模块采用功率因素校正技术及相位校正技术，减小了系统对电网的谐波影响。双闭环电压，电流调节技术及独特的电流折弯均流技术，使各模块输出电流的分配合理有效，保证了电源系统始终处于最佳运行状态。
4. 监控单元：采用高性能高速 PLC（可编程控制器）或微机，对系统中各单元进行实时扫描及控制，向控制母线提供高品质的直流输出。同时根据电池运行的环境温度参数，对电池的均、浮充电压进行 V-T 曲线控制，使电池处于良好的满容量状态。此外，监控系统对每个电池的电压曲线进行监控，便于对失效电池及时删除。

Product Features

1. Display Operating Unit: This panel adopts new intellectual touch interface with human-computer talk which is not only intuitive, but also very easy for setting system running parameters. Up to 255 pieces of menu can display nearly all running parameters including voltage value of every battery unit (or every battery group). Advanced touch display interface replaces traditional pushbuttons can increase system reliability further.
2. AC Distribution Unit: it adopts two way incoming for AC power supply, users can use 1#way or 2#way depending on practical condition. System default setting takes 1#way as main incoming, it arranges AC energy for various power modular units.
3. Power Output Unit: It adopts original Benning HV switching power supply modular unit which import from German Benning Company or same one made in China, N+1 redundant design lets occasionally faulty modular unit go out of running, but keep on normal running of main system, it can increase working reliability for main system. Its PNP function eases maintenance work very much, the technique of power factor and phase correction to HV switching power supply modular units decreases its influence of harmonic wave to electric network, double closed loop voltage and current adjusting technique and particular equalizing current with indirect circuit technique make output current distribution of various modular unit effective and reasonable, guarantee power supply system always in optimized running situation.
4. Monitoring Unit: It adopts advanced and high speed PLC (programmable logic controller) or computer for real time scanning and controlling of various units in the system, and provides high quality DC output to controlling busbar. It also controls V-T curve for batteries' equalizing and floating charging voltages depending on temperature condition parameters of working batteries to guarantee batteries working at good full capacity condition. Moreover it monitors voltage curve to every battery and cancel failed batteries on time.

技术参数

Technical Parameters

项目 Item	数值数值 Value			测试条件 Measurement Condition
	最小值 Min	典型值 Typical	最大值 Max	
输入电压范围 (V Ac) Input voltage range	260	380V ± 15%	456	额定输出, 满载 Rated output, Full load
输出可调范围 (V Dc) 110V 系统 Adjustable output range 110V system	90	110	143	额定输出, 满载 Rated output, Full load
输出可调范围 (V Dc) 220V 系统 Adjustable output range 220V system	180	220	286	额定输出, 满载 Rated output, Full load
稳压精度 Voltage stability accuracy		0.1%	0.1%	输出 198-286V Dc, 20-100% 负载, 输入 260-456V AC Output 198-286V Dc, 20-100% load input 260-456V AC
稳流精度 Current stability accuracy		0.5%	0.5%	输出 198-286V Dc, 20-100% 负载, 输入 260-456V AC Output 198-286V Dc, 20-100% load input 260-456V AC
动态响应 Dynamic response	100 μs	208 μs	500 μs	额定输出 20%-75% 负载跃变 Rated output load jump
充电机效率 Charger efficiency	90%	91%	93%	输出 240V, 90% 负载 Output 240V, 90% load
最大可闻噪声 (dB) Max. audible noise dB		45	50	满载, 环境噪声 40dB Full load, ambient noise 40dB
宽频杂音 (mv) Wide frequency cacophony		25	40	额定输入输出 Rated input and output
峰峰杂音 (mv) Wave peak cacophony		50	100	额定输入输出 Rated input and output
并机均流度 Current distribution equalization	± 1%	± 3%	± 5%	额定输入输出 Rated input and output
启动延时 (秒) Starting time delay (s)	1	2	3	
纹波系数 Ripple factor		0.01%~0.1%		频宽 0~40MHz Wide frequency 0 ~ 40MHz
绝缘 Dielectric		2000V Ac 50Hz		时间 1 分钟, 漏电流 10mA 1min, leak current 10mA
内部散热器温升 Temperature rise of internal radiator	1 级 (100% 的额定输出电流时连续工作) Class 1 (continuous operating when 100% rated output current reaches)			在充电浮充电电压范围 Within voltage range of charging and floating charging
自动限流特性 Automatic current limitation performance	恒功率保护, 输出电流不会增大, 直流输出电压下降 Constant power protection, output current does not increase, DC output voltage decreases			浮充电下运行, 输出电流超过 110% 额定电流 Running under floating charging, output current over 110% rated current
输入电压保护 Input voltage protection	自动关闭整流模块停止输出电流 Automatically close rectification module, stop output current			浮充电下运行, 交流输入电压超过整定值 Running under floating charge voltage, AC input voltage exceeds setting value
输出电压保护 Output voltage protection performance	自动停止输出电流 Automatically stop output current			浮充电下运行, 输出电压超过整定值 Running under floating charge voltage, output voltage exceeds setting value
输出短路保护特性 Output shortcircuit	故障消除后, 自动恢复正常运行 Automatically go back to normal running when error is clear			浮充电下运行, 输出因故障短路 Running under floating charging, output short circuit due to error
输出电流 Output current	5A, 10A, 20A, 30A, 40A			
接口定义 Interface definition	RS232、RS485			
冷却方式 Way of communication	智能温控型强迫风冷、自冷 (智能温控型强迫风冷) Compulsory wind cooling with intellectual temperature control			
可靠性设计 Reliability design	N+1 冗余 Redundancy			
面板显示 Panel display	直观的输出电压值、输出电流值显示 Intuitionist output voltage, output current display			
输入缺相保护功能有 Input phase shortage protection function	有 Yes			
过温保护 Over-temperature protection	90 ± 5℃			