



## GLD series IGBT DC Power supply

### GLD系列IGBT直流电源

GLD 系列直流电源是专为采用提拉泡生法生长蓝宝石单晶炉而设计的直流开关电源，它以 DSP 和 CPLD 作为控制核心，IGBT 作为功率逆变器件，高频超微晶变压器为负载匹配变压器，肖特基二极管全波整流，通过相控调节方式，实现输出功率连续可调的直流调压控制电源。整个逆变工作过程采用高精度功率闭环控制，LCC 准谐振方式，实现了 IGBT 软开关，降低了 IGBT 的开关损耗以及电源本体对外的电磁辐射和传导干扰。

GLD series DC power supply is a DC switching power supply which is specially designed for single-crystal furnaces adopting Czochralski & Kyropoulos method in the growing of sapphire. It is a DC voltage regulation control power supply which takes DSP and CPLD as the control core, IGBT as the power inverting device and high-frequency ultra-crystalline transformer as the load-matching transformer. Adopting Schottky diode full-wave rectification, it realizes continuously adjustable output power by the phase controlled regulation way. In the entire inverting process, by adopting high-precision power closed-loop control and LCC quasi-resonant mode, it realizes IGBT soft switching and reduces the switching losses of IGBT as well as the electromagnetic emission and conducted interference generated by the power supply to the outside world.

GLDS—□KW/□V/□V DC—□A

#### 选型说明 Model definition

输出电流

Output Current

输出电压

Output Voltage

输入电压: AC 3\*380V 其它

Input Voltage: AC 3\*380V Other

额定功率

Rated Power

冷却方式 S: 水冷

Cooling mode S: Water cooling

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## 特点

### Characteristics of Power supply

- 采用柜式一体化或模块化设计, 按行业标准设计。
  - 模块化结构采用 N+1 冗余配置, 可靠性高。
  - 采用 IGBT 作为逆变功率器件、LCC 准谐振方式, 超微晶合金变压器, 体积小、重量轻、功率因数高、转换效率高。
  - 高速 DSP 芯片和高精度 AD 转换。
  - 具有输入过 / 欠压、输出限电压、输出限电流、负载开路 / 短路, 温度异常保护等完善的故障检查及保护功能。
  - 输入 / 输出信号采用隔离器件, 抗干扰能力强。
  - 多种通讯方式可选。
- It adopts cabinet-type integration or modular design according to relevant industrial standards.
  - The modular structure adopts n + 1 redundancy configuration with high reliability.
  - IGBT is used as the inverter power device, and the ultra-crystalline alloy transformer has the advantages of small volume, light weight, high power factor and high conversion efficiency.
  - High speed DSP chip and high precision AD conversion.
  - Power supply has perfect fault checking and protection functions such as input overvoltage / undervoltage, output voltage limiting, output current limiting, load open / short circuit, temperature abnormal protection, etc.
  - The input / output signal adopts isolation device with strong anti-interference ability.
  - Multiple communication modes can be selected.

## 技术参数

### Technical parameters

### GLD series IGBT DC Power Supply

输入 Input	3×AC380V±15%; 50/60HZ	
输出 Output	DC 0-16V (可定制) DC 0-16V (customizable)	
	DC 0-15000A (可定制) DC 0-15000A (customizable)	
主要特性 Main features	给定方式 Given method	模拟量、通讯 Analog quantity, communication
	控制模式 Control mode	恒压、恒流、恒功率 Constant voltage, constant current, constant power
	控制精度 Control precision	优于0.05% Overtop 0.05%
	稳定精度 Stabilization precision	优于0.05% Overtop 0.05%
	功率因数 PF	≥0.95
	效率 Efficiency	90-93% (高效型可选) 90-93% (High-efficiency type selectable)
	通讯 Communication	RS485 Modbus RTU标准协议 RS485 Modbus RTU standard protocol
	噪声 Noise	≤60dB
	保护功能 Protective function	过/欠压、过流、过热、水流量保护 Overvoltage/undervoltage, overcurrent, overheating, water flow protection
	工作方式 Working mode	连续式 Continuous type
冷却方式 Cooling mode	水冷 Water cooling	
环境 Environment	使用环境温度 Ambient temperature	-5°C~+40°C
	储存温度 Storage temperature	-5°C~+60°C
	相对湿度 Relative humidity	≤90%RH, 不结露 No moisture condensation ≤90%RH
结构 Structure	安装方式 Installation way	室内柜式安装 Indoor cabinet-type installation

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