

3100W 双向 DC/DC 电源模块

产品特点

- ◆ 全数字控制电源
- ◆ 正向和反向能量双向流动
- ◆ 模块化设计，支持并联扩容
- ◆ 双方向高效率
- ◆ 正反向无缝切换
- ◆ 数字通信接口，完善的远程控制和信号上报功能
- ◆ 完善的故障保护功能，故障记录功能
- ◆ 支持 BootLoader，维护方便
- ◆ 可通过 UL、TUV、CE、CCC 认证



主要市场和应用：分容/储能/车载等领域

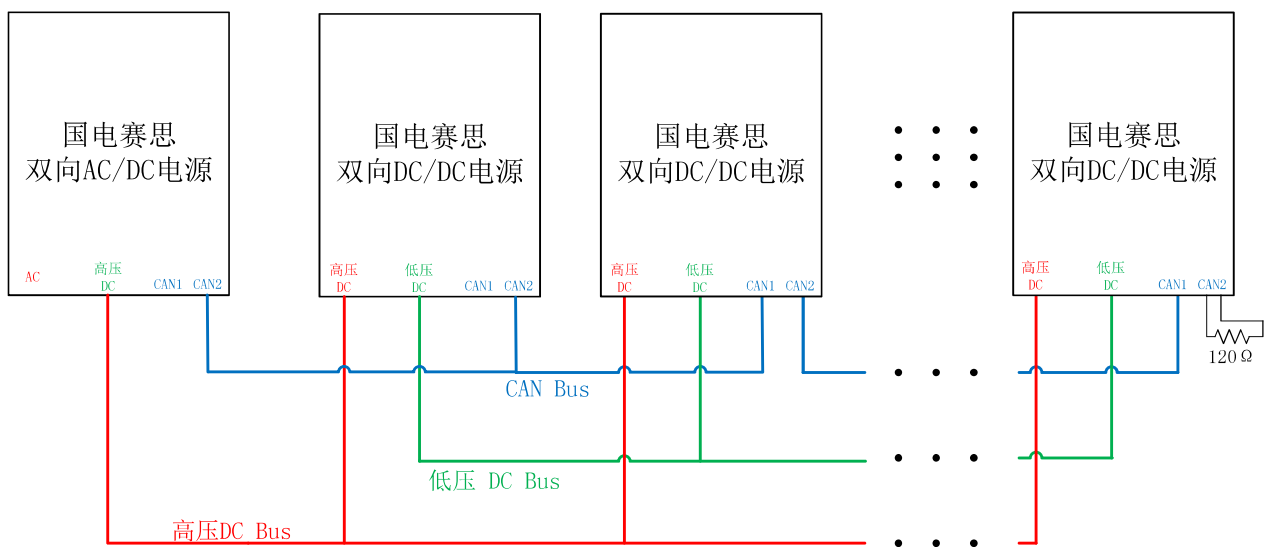
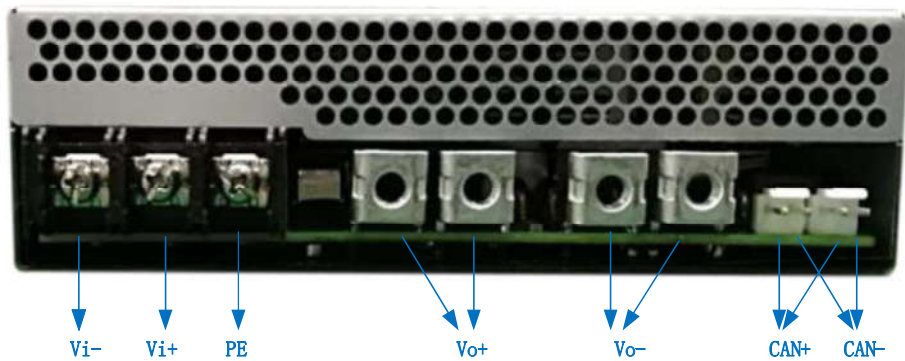


电气性能指标 (DC/DC 正向工作)		
类别	指标名称	参数
输入特性	输入电压	790 Vdc(需搭配前级 AC/DC 使用)
	输入电流	4.5A MAX
输出特性	输出电压范围	13.9-14.2V
	最大输出功率	3100W
	输出电流	220A MAX
	效率	95%Max
	温度系数	±0.02% / °C
	工频纹波	<100mV
电气性能指标 (DC/DC 反向工作)		
类别	指标名称	参数
输入特性	输入电压范围	14.2-15V
	输入电流	165A MAX
	最大输入功率	2480W
输出特性	输出电压	790 Vdc
	输出电流	3.5A MAX
	效率	94.5%Max
其他电气指标		
类别	指标名称	参数
正反向切换	直流侧切换点	正反向无缝切换
对外通信	通信接口	CAN 总线

	上报信号	正反向信息
		各种保护信息
	接收信号	电压电流信息
		开关机信号

其他相关指标		
类别	指标名称	参数
工作环境	工作温度	-10℃ ~ 45℃
	储存温度	-40℃ ~ 70℃
	相对湿度	5% ~ 95%
	海拔高度	5000 米
	MTBF 预计	>250k 小时, 35℃, 满载
	引用标准	Telcordia SR_332
保护功能	防反接保护	正向输入防反保护（反接损坏保险）
	过欠压保护	正向输入过欠压保护
	短路保护	保护模式：可恢复
	风扇故障保护	保护模式：可恢复
	过温保护	保护模式：可恢复
	过载保护	>105%, 1 分钟保护, 可恢复 >120%, 10 秒钟保护, 可恢复
其它功能	风扇调速	有
	并联功能	有
	低压侧不均流度	<±5%
	BootLoader 功能	支持 CAN 在线升级
	故障记录功能	可记录 100 条故障
	指示灯状态	故障：红色 正向：蓝色 反向：绿色
外形尺寸（长×宽×高）		282×150×45mm
端子螺钉最大扭矩(lbf.in)		输入高压端子（M4）：12 输出低压端子（M5）：13

产品接口和并机接线图



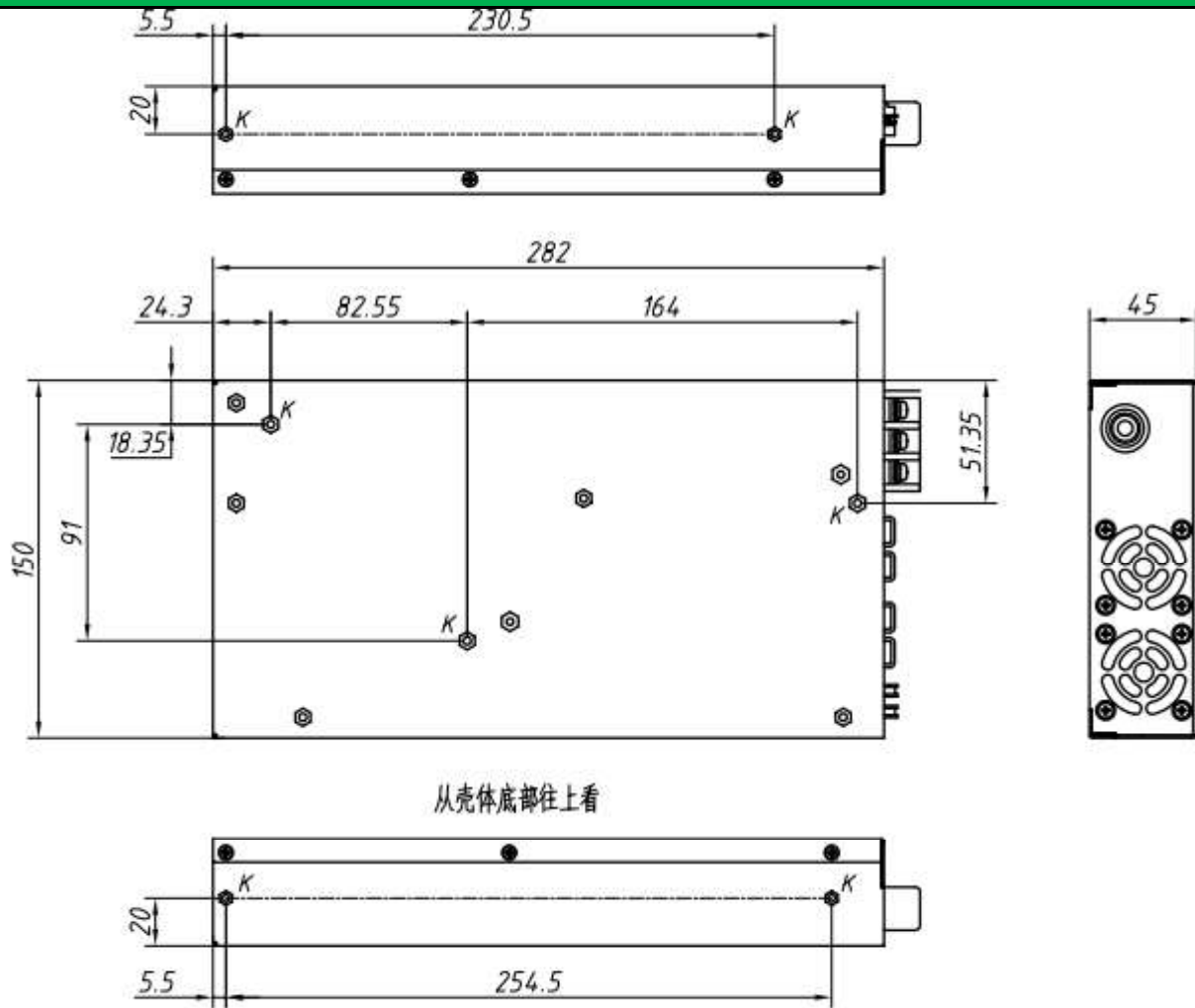
端口	连接方式	说明
高压 DC 侧	高压侧进行并联，接入 DC790V	Vi+：高压正；Vi-：高压负；PE：地线
低压 DC 侧	低压侧进行并联	Vo+：低压正；Vo-：低压负
CAN 通信	CAN 通讯之间进行级联，同时在任意一组 CAN+与 CAN-间接入 120 Ω 电阻	CAN+：CAN 通讯高电平 CAN-：CAN 通讯低电平

产品使用注意事项

	应用环境问题	建议
维护注意事项	灰尘积累阻挡风道/风扇	增加系统防尘网并定期清理
	酸性/硫化/潮湿环境腐蚀线路	设备尽可能远离恶劣环境，尤其是含有酸性气体、硫化气体等空间场所。

	系统散热设计不良/热风回流	进行系统热仿真，选择合适的系统散热风扇，合理设计风道，避免热风回流。
DC/DC 过压保护点设置	客户系统 DC/DC 端需设置合理的反向工作动态过压保护点，过压保护点设定值应小于 18Vdc	

产品装配尺寸图：



3100W Bidirectional DC/DC Converter

Main features

- ◆ Digital control
- ◆ Positive and negative energy flows in both directions
- ◆ Operate in parallel is available
- ◆ High efficiency
- ◆ Positive and negative energy switch seamlessly
- ◆ Digital communication, perfect remote control and signal report
- ◆ Perfect function of fault protection, fault recording function
- ◆ Support Bootloader, convenient maintenance
- ◆ Satisfy the request of UL, TUV, CE, and CCC



Application

Energy bidirectional flow

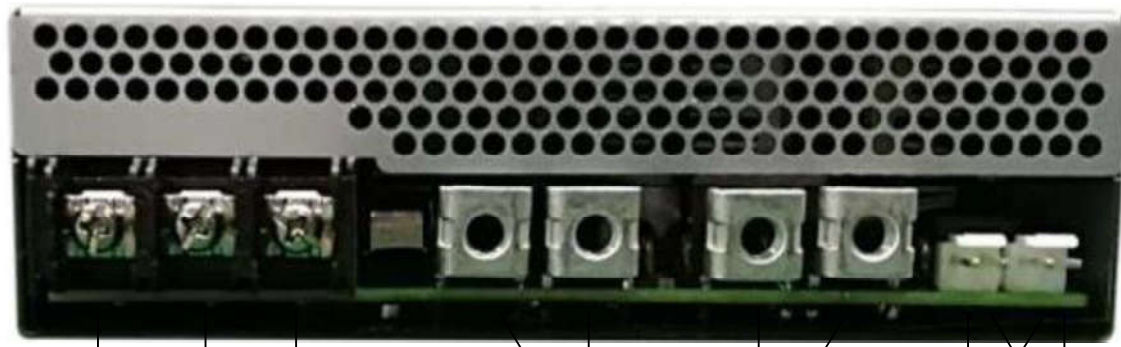


Main electrical characteristic (DC to DC Positive direction)		
Type	Index	Rated
Input characteristic	Input Voltage	790Vdc
	Input Current	4.5A MAX
Output characteristic	Output Voltage	14V
	Output Current	220A MAX
	Maximum Output Power	3100W
	Efficiency	95%Max
	Precision of Voltage Regulation	±0.5%
	Temperature Coefficient	±0.02% / °C
	Power Frequency Ripple	<100mV
Main electrical characteristic (DC to DC negative direction)		
Type	Index	Rated
Input characteristic	Input Voltage	14Vdc
	Input Current	165A MAX
	Maximum input power	2480W
Output characteristic	Output Voltage	790Vdc
	Output Current	3.2A MAX
	Efficiency	94.5%Max
Other electrical characteristic		

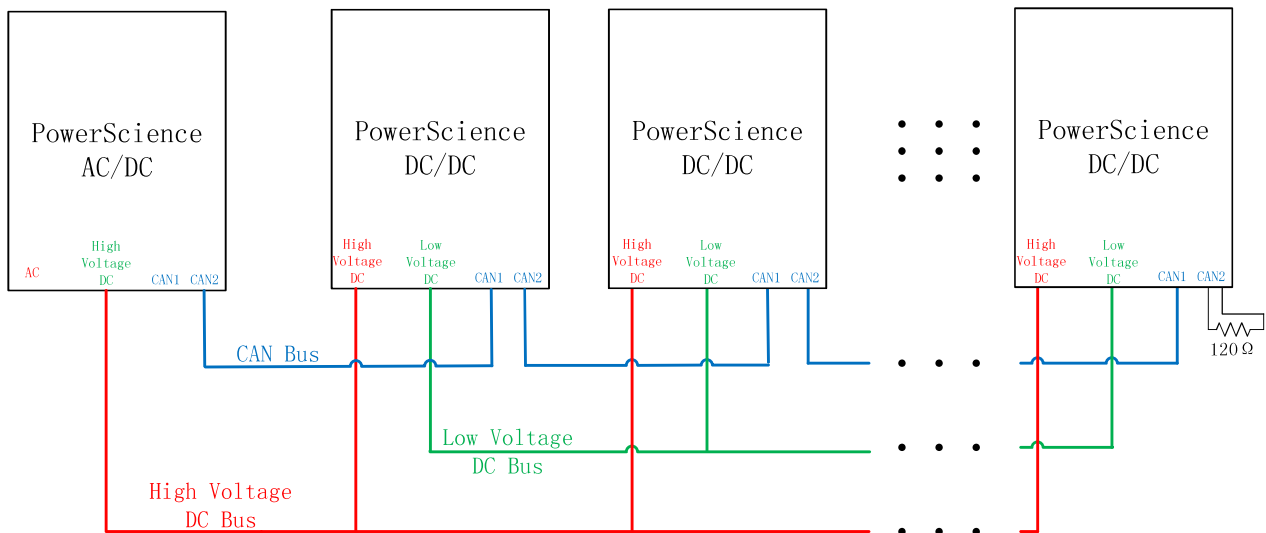
Type	Index	Rated
Direction Switch	Switch Point	Switch without gap
Communication	Port	CAN
	Report Signal	Positive and negative information
		All kinds of protection information
		Voltage current information
Remote Control	Turn-on and turn-off	

Other characteristic		
Type	Index	Rated
Environmental	Operation Temperature	-10℃ ~ 45℃
	Storage Temperature	-40℃ ~ 70℃
	Relative Humidity	5% ~ 95%
	Altitude	5000m
	MTBF	>250k hours, 35℃, full load
	Standard	Telcordia SR_332
Protection	Anti reverse protection	Forward input anti reverse protection (Fuse damage)
	Overvoltage and undervoltage protection	Forward input overpressure and undervoltage protection
	short-circuit protection	Turn-on short circuit and operating short circuit
	Fan Fault Protection	Protect mode: Auto recovery
	Over Temperature Protection	Protect mode: Auto recovery
	Overload Protection	>105%Maximum load, 1 minute >120%Maximum load, 10 seconds
Other Function	Speed Governing of Fan	Yes
	Run in parallel	Yes
	Unbalance Rate of DC Current Sharing	<5%
	Indicator lamp	Fault: Red DC to DC Positive direction: Blue DC to DC negative direction: Green
Sizes		282×150×45mm
Maximum Screw Torque (lbf.inch)		AC terminal (M4) : 12 DC terminal (M5) : 13

Interface figure and Parallel operation instructions



PE Vi- Vi+ Vo+ Vo- CAN+ CAN-



Port	Connection type	Instructions
High voltage DC terminal	The high voltage side is connected in parallel to DC790V.	Vi+:The positive pole of high voltage Vi-:The negative pole of high voltage PE: Protecting Earthing
Low voltage DC terminal	The low voltage side is parallel.	Vo+:The positive pole of low voltage Vo-:The negative pole of low voltage
CAN communication	Connect the communication lines, and in any group CAN + and CAN indirectly into 120 Ω resistance	CAN+: High-level of CAN communication ; CAN-: Low-level of CAN communication

Precautions for use		
	Application problems	Advice
Maintenance precautions	The duct/fan is blocked by dust	Add system dust-proof net and clean regularly
	Line corroded by acidic/sulfuretted/moist environment	Keep the equipment as far away from the bad environment as possible, especially contains acid gas, sulfide gas and other space places.
	The system has poor heat dissipation design/Hot air reflow	System thermal simulation. Choose the right system cooling fan. Design airway reasonably to avoid hot air reflow
DC/DC overvoltage protection point Settings	Set reasonable reverse working dynamic overpressure protection points. And the set value should be less than 18Vdc.	

Dimension Figure

