

4200W 双向 AC/DC 电源模块（非隔离）

产品特点

- ◆ 全数字控制电源
- ◆ 单相整流-并网逆变能量双向流动
- ◆ 模块化设计
- ◆ 双方向高效率
- ◆ 双方向高功率因数，低谐波电流
- ◆ 正反向自主判断
- ◆ 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
- ◆ 6kV 浪涌保护能力
- ◆ 良好的电磁兼容性，满足 EN55032 等国际标准
- ◆ 5000 米海拔高度设计
- ◆ 高温高湿环境设计



主要市场和应用：分容/储能等领域



电气性能指标（AC/DC 正向工作）

类别	指标名称	参数
输入特性	电压范围	176-264Vac
	频率范围	50/60 ± 3Hz
	启动冲击电流	<25A @264Vac
	电流	<25A MAX
	功率因数	>0.99 @220Vac,满载
	电流谐波	<5% @220Vac,满载
输出特性	输出电压	380Vdc
	输出电流	15A MAX
	整流效率	97% Max
	稳压精度（含初始精度、源调整率、负载调整率）	±1%
	温度系数	±0.02% / °C
	最大输出功率	4200W

电气性能指标（DC/AC 反向工作）

类别	指标名称	参数
输入特性	输入电压稳压点	380Vdc
	输入电流	15A MAX
	最大输入功率	4200W

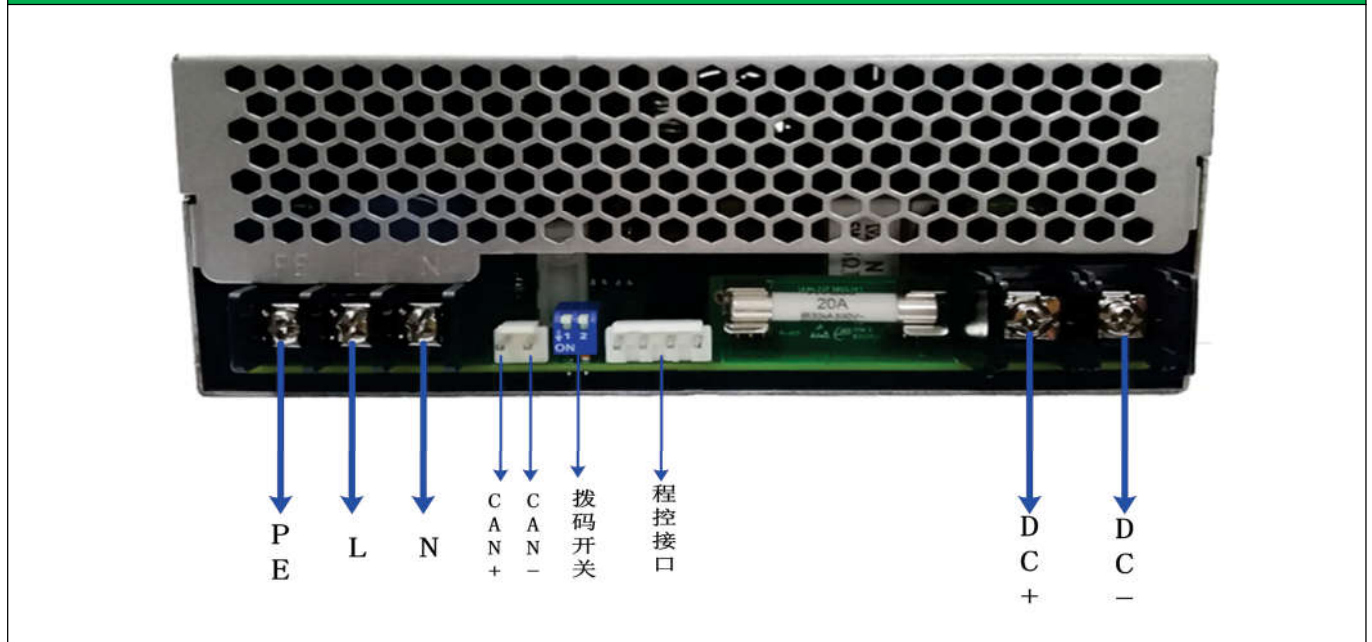
输出特性	并网电压范围	176-264Vac (253-264Vac 范围性能有下降)
	并网频率范围	50/60±3Hz
	并网电流	<25A MAX
	并网功率因数	>0.99 @220Vac,满载
	并网电流谐波	<3% @220Vac, 满载
	效率	97%Max

其他电气指标	
类别	说明
通信接口	CAN 总线
输入控制接口 (触点式)	由客户控制, 触点闭合开机, 触点断开关机
输出指示接口 (光耦式)	由客户提供+5V 电源, 工作时光耦闭合, 不工作时断开

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	孤岛保护	有
	交流侧欠压保护	<170VAC; 保护模式: 可恢复
	交流侧过压保护	>264VAC; 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
其它功能	风扇调速	有
	指示灯状态	故障: 红色 AC/DC 正向工作: 蓝色 DC/AC 反向工作: 绿色
电磁兼容性	传导干扰	EN55022 Class A
	辐射干扰	EN55022 Class A
	电流谐波	EN61000-3-2, A 类设备
	电压波动及闪烁	EN61000-3-2, A 类设备
	浪涌	共模: 6kV; 差模: 6kV
	电快速瞬变脉冲群	YD/T1082, 2kV
	雷击	共模: 10KA; 差模: 10KA
	输入电压暂降、中断与缓变	EN61000-4-11, ETSI EN 301 489
	静电放电抗干扰性	EN61000-4-2, 空气放电 8kV, 接触放电 6kV
	传导抗扰性	EN61000-4-6, EN 55024, ETSI EN 300 386, 3V

	辐射抗扰性	EN61000-4-3, ETSI EN 300 386, 80M~800MHz 3V/m, 800M~960MHz 10V/m, 960M~1GHz 3V/m, 1.4G~2GHz 10V/m, 2G~2.7GHz 3V/m, 80% AM
外形尺寸 (长×宽×高)		351×149×65mm

产品外观及接口图



使用注意事项:

- 1、本双向电源为非隔离产品，直流侧配合用电设备使用时，直流侧用电设备须根据自身功率要求配置输入侧的高压直流保险，以确保在直流侧用电设备发生故障（如短路）时能可靠分离，否则将会导致本双向电源直流侧保险损坏；
- 2、本双向电源交流侧上电后，经电源内部软启动电路工作完成（约 5 秒），方能正常输出直流电压，这一阶段严禁启动直流侧用电设备带负载工作，否则将会导致本双向电源软启动电路损坏。

4200W Bidirectional AC/DC Converter (non-isolated)

Main features

- ◆ Digital control
- ◆ Single-phase rectifier and grid connected inverter
- ◆ Modular design
- ◆ High efficiency in bidirection
- ◆ High power factor and low harmonic current in bidirection
- ◆ Automatic switch the energy direction
- ◆ Fast switch the energy direction
- ◆ Digital communication, perfect remote control and signal report
- ◆ Perfect fault protective capability and fault record
- ◆ Upgrade by BootLoader
- ◆ 6kV surge protective capability
- ◆ Good electromagnetic compatibility, reach EN55032 standard
- ◆ 5000 meter altitude applicability
- ◆ High temperature and high humidity applicability



Application: Grading Capacity and Storing Energy



Main electrical characteristic (AC to DC direction)		
Type	Index	Rated
Input Characteristic	Input Voltage	176-264Vac
	Frequency of Input voltage	50/60 ± 3Hz
	Start-up Inrush Current	<25A @220Vac,
	Input Current	<25A @220Vac
	Power Factor	>0.99 @220Vac, full load
	THDi	<5% @220Vac, full load
Output Characteristic	Output Voltage	380Vdc
	Output Current	15A MAX
	Rectifier Efficiency	97%Max
	Precision of Voltage Regulation	±1%
	Temperature Coefficient	±0.02% / °C
	Maximum Output Power	4200W
Main electrical characteristic (DC to AC direction)		
Type	Index	Rated

Input Characteristic	Input Voltage	380Vdc
	Input Current	15A MAX
	Maximum Input Power	4200W
Output Characteristic	Output Voltage	176-264Vac
	Frequency of output Voltage	50/60 ± 3Hz
	Output Incurrent	<25A MAX
	Power Factor	>0.99 @220VAC, full load
	THD of Output Current	<3% @220VAC, full load
	Efficiency	97%Max

Other electrical characteristic		
Type	Index	Rated
Communication	Port	CAN Bus
	Report Signal	Direction
		Alarm Signal
		Voltage and Current
	Remote Control	Turn-on and turn-off

Other electrical 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	Islanding Protection	Yes
	Phase missing Protection	Yes
	Phase Fault Protection	Yes
	AC Under-voltage protection	<170Vac; Protect mode: Auto recovery
	AC Over-voltage protection	>264Vac; Protect mode: Auto recovery
	Fan Fault Protection	Protect mode: Auto recovery
	Over Temperature Protection	Protect mode: Auto recovery
Other Function	Speed Governing of Fan	Yes
	Indicator lamp	Fault: Red AC to DC direction: Blue DC to AC direction: Green

EMC & Safety	Conducted Emission	EN55022 Class A
	Radiated Emission	EN55022 Class A
	Harmonic Current Emission	EN61000-3-2, A class equipment
	Voltage fluctuation and Flicker	EN61000-3-2, A class equipment
	Immunity to surges	L&N to PE: 6kV; L to N: 6kV
	Immunity to Electrical Fast Transient	YD/T1082, 2kV
	Immunity to lightning	L&N to PE: 10KA; L to N: 10KA
	Immunity to Voltage Dips and short interruptions	EN61000-4-11, ETSI EN 301 489
	Immunity to Electrostatic Discharge	EN61000-4-2, Air discharge 8kV, Contact discharge 6kV
	Immunity to Continuous Conducted Interference	EN61000-4-6, EN 55024, ETSI EN 300 386, 3V
	Immunity to Radiated Electric Fields	EN61000-4-3, ETSI EN 300 386, 80M~800MHz 3V/m, 800M~960MHz 10V/m, 960M~1GHz 3V/m, 1.4G~2GHz 10V/m, 2G~2.7GHz 3V/m, 80% AM
Size		351×149×65mm

Application Attention:

- 1、The bidirectional converter is a non-isolated product. When the DC side is used with the electric equipment, the electric equipment need be configured with high voltage DC insurance on the input side according to its own power to ensure reliable separation when the DC side power equipment fails (such as short circuit). Otherwise, it will cause damage to the DC side of the bidirectional converter.
- 2、After the AC side of the bidirectional converter is powered on, the DC voltage can operate normally until the internal soft-start circuit of the converter is completed (about 5 seconds). During this time, it is strictly forbidden to start the DC side power equipment with any load, otherwise soft start circuit of the bidirectional converter will be damaged.