

## 产品质量证明书

### Product Quality Certificate

产品： 氢燃料电池堆（5kW/66V） Product: Hydrogen Fuel Cell Stack (5kW/66V)		产品序列号 Serial Number	SZFC-5000
主要技术指标 Key Specifications			
检验标准 Inspection Standard		实测结果 Test Results	
输出性能 Output Performance	功率 Power	5000W	
	操作电压 Operating Voltage	55V-99V	
	操作电流 Operating Current	0A-90A	
	效率 Efficiency	>40%	
燃料 Fuel	氢气纯度 Hydrogen Purity	≥99.99% (CO<1PPM)	
	氢气压力 Hydrogen Pressure	0.035Mpa~0.05Mpa	
	氢气耗量 Hydrogen Consumption	(90A) 77L/min	
工作环境 Working Environment	环境温度 Ambient Temperature	0-35°C	
	环境湿度 Ambient Humidity	10%-90%	
	储存环境 Storage Environment	0-60°C	
物理参数 Physical Parameter	片数 Number of Cells	110	
	电堆尺寸 Stack Dimensions	198*262*429.5mm	
	重量 Weight	14000g	

## 5000W 氢燃料电池堆使用说明书

### 5000W Hydrogen Fuel Cell Stack User's Manual

1. 管路连接：将氢气连接→减压阀→连接燃料电池电堆氢气进气管。  
进气管连接进气阀后接入燃料电池进气口（IN），排气口（OUT）一端连接排气阀。  
（燃料电池不使用时将进排气口密封保存。）

#### Pipeline Connection:

Connect the hydrogen gas →the pressure reducing valve → connect to the hydrogen intake pipe of the fuel cell stack. The intake pipe is connected to the intake valve and then enters the fuel cell's intake port (IN), and one end of the exhaust port (OUT) is connected to the exhaust valve.

(When the fuel cell is not in use, seal the intake and exhaust ports for storage.)

2. 启动：
  - (1) 逐步调节氢气减压阀，调到 0.05MPa。
  - (2) 控制盒外接 24V 电源。
  - (3) 按下控制盒 ON/OFF 按钮，控制正常运行。
  - (4) 氢气进入燃料电池堆，燃料电池开始工作，风扇开始转动。

#### Startup:

- (1) Gradually adjust the hydrogen pressure reducing valve to 0.05MPa.
- (2) Connect the control box to a 24V power supply.
- (3) Press the ON/OFF button on the control box to initiate normal operation.
- (4) Hydrogen enters the fuel cell stack, the fuel cell starts operating, and the fan begins to rotate.

3. 燃料电池启动后，可以根据需要在额定功率范围内逐步增加负载，但不能立即加到额定功率。

After the fuel cell is started, the load can be gradually increased within the rated power range as required, but cannot be added to the rated power immediately.

4. 燃料电池在不同的运行电压下，输出功率不同，可参考尾页放电曲线图。

At different operating currents, the fuel cell outputs different power levels. Refer to the discharge curve chart on the last page.

5. 关闭氢燃料电池：

当准备关闭燃料电池时，请确认负载已经关闭，氢气阀门关闭，关闭控制盒外接电源，风扇继续运转，直至电池中的氢气耗完。

Shut down the hydrogen fuel cell:

When preparing to shut down the fuel cell, please ensure that the load is turned off, the hydrogen valve is closed, the external power supply to the control box is turned off, and the fan continues to run until the hydrogen in the cell is completely exhausted.

#### 6. 控制保护:

氢燃料电池运行电压低于 60V，控制板会保护，切断进气，对电池堆进行保护，控制盒指示灯会有红灯闪烁。关闭负载，关闭控制盒电源，重新开控制盒电源可正常工作。氢燃料电池运行电压不要低于 60V，长时间60V 运行会对燃料电池损伤，最好以额定电压或高于额定电压运行。不建议长时间低于额定电压运行，低于额定电压运行会使电堆温度快速上升。控制程序设有高温保护，高于 65°C 会切断进气。

#### Control protection:

If the operating voltage of the hydrogen fuel cell drops below 60V, the control board will activate protection measures, including cutting off air intake to safeguard the battery stack. The indicator light on the control box will flash red. In such a situation, please turn off the load, switch off the power to the control box, and then restart the control box to resume normal operation. It's crucial to avoid prolonged operation below 60V, as it can cause damage to the fuel cell. Ideally, operate the fuel cell at or above the rated voltage. Continuous operation below the rated voltage is not recommended, as it can lead to a rapid rise in stack temperature. The control program includes high-temperature protection, which will automatically cut off air intake if the temperature exceeds 65°C.

## 注意事项 Precautions

1. 当燃料电池运转时，一定要确保燃料电池中氢气的压力在 0.05Mpa，同时一定要确保足够的氢气流量。如果供氢系统中，氢气压力太高、太低或者流量不足都会对燃料电池造成损害。

When the fuel cell is in operation, it is essential to ensure that the hydrogen pressure in the fuel cell is at 0.05MPa, as well as sufficient hydrogen flow. Damages to the fuel cell can occur due to a much higher, lower hydrogen pressure or insufficient supply in the hydrogen supply system.

2. 氢燃料电池电堆氢气进口确保在上，电堆排气口向下，保持排水流畅（否则侧会损坏电池）。排气管请远离电堆，余气吸入电堆会对电堆造成损伤!!!

Ensure that the hydrogen gas inlet of the hydrogen fuel cell stack is on the top, and the stack exhaust port is downward to keep the drainage smooth (otherwise it will damage the battery). Please keep the exhaust pipe away from the electric stack, the residual air sucked into the electric stack will cause damage to the electric stack!!!

3. 电池所在运行环境温度不能过高，过高会影响电堆输出性能，或者高温控制盒会保护，运行温度控制在 55℃ 以内。

The temperature of the operating environment where the battery is located should not be too high. If it is too high, it will affect the output performance of the stack, or the high temperature control box will protect it, and the operating temperature should be controlled within 55°C.

4. 一定要先启动燃料电池，然后加负载。

Be sure to start the fuel cell first, and then add the load.

5. 电池系统不使用时请妥善保存。

Please keep the battery system properly when not in use.

## 申明与警示 Declaration and Warning

1. 在操作燃料电池电堆前请通读此说明书，并在操作过程中将本说明书放于手边。

Before you work with the fuel cell stack, please read through the Manual and keep it at hand during the operation.

2. 按照本说明书所列说明进行操作。

Follow the instructions which listed in the Manual.

3. 禁止对 5kW66V 燃料电池电堆进行拆解或改装。对该电堆的任何修改都会构成重大的安全隐患。智达盛世（广州）氢能与环境科技有限公司不对任何由于未经允许的改装所造成的损伤负责。

Disassembling or refitting the 5kW66V fuel cell stack is prohibited. Any modification to the fuel cell stack will pose a major hidden safety danger. SENZA Hydrogen Energy And Environmental Technology Co.,Ltd. is not liable for any damage caused by unauthorized modification.

4. 5000W燃料电池电堆在运行过程中需消耗氧气。为防止缺氧，仅可在良好的通风环境中运行。

5kW66V fuel cell stack needs to consume the oxygen during the operation. To prevent anoxia, it may only be operated in a well-ventilated environment.

5. 由于氢气属无色、无嗅的可燃气体，因此严禁在 5kW66V 燃料电池电堆附近 吸烟，并确保燃料电池电堆远离火源和热源。

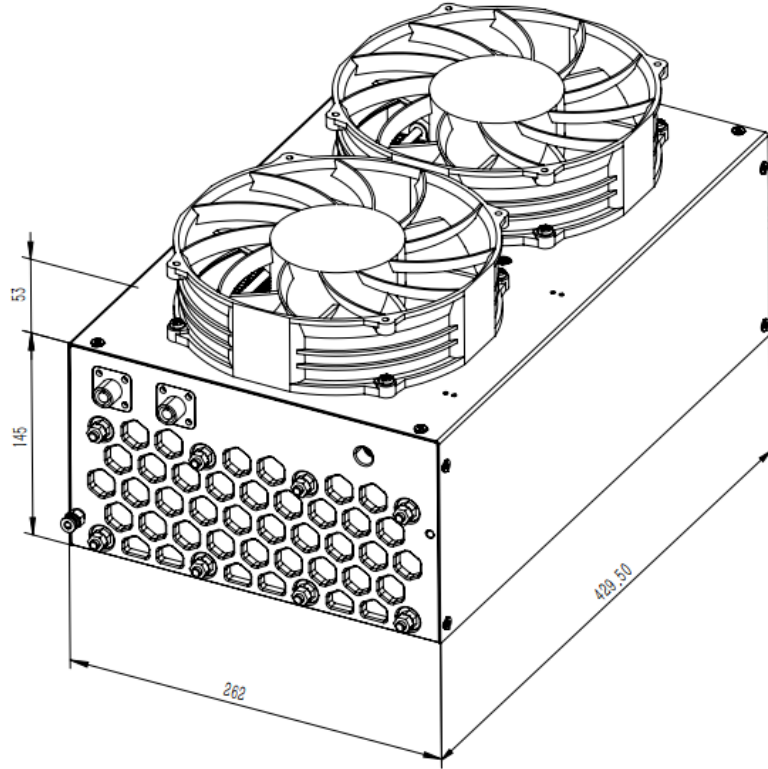
Since the hydrogen is colorless and odorless flammable gas, smoking is strictly prohibited near the 5kW66V fuel cell stack, and the fuel cell stack shall be kept away from the fire and heat sources.

6. 确保 5000W 燃料电池电堆远离儿童。

Make sure the 5kW66V fuel cell stack is kept away from the children.

## 5000W 氢燃料电池电堆

## 5000W Hydrogen Fuel Cell Stack



5000W Hydrogen Fuel Cell Discharge Curve

