

## 产品质量证明书

### Product Quality Certificate

产品： 氢燃料电池堆（600W） Product: Hydrogen Fuel Cell Stack (600W)		产品序列号 Serial Number	SZFC-600
主要技术指标 Main technical indicators			
检验标准 Quality Inspection Standard		实测结果 Test Results	
输出性能 Output Performance	功率 Power	600W	
	操作电压 Operating Voltage	20V-37V	
	操作电流 Operating Current	0A-31A	
	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	(31A) 9.6L/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	40	
	电堆尺寸 Stack Dimensions	145*162*170mm	
	重量 Weight	3255g	

## 600W氢燃料电池堆使用说明书

### 600W 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 13V 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 13V 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用恒流方式，以 3A 斜率逐步增加负载，设置电流值分别为：0A、3A、6A、9A、……、31A，加载斜率 3A/10S，建议最大电流值设定不超过 37.2A。

After the fuel cell is started, it can be gradually increased in current within the rated power range as needed using a constant current mode, with a slope of 3A. The set current values are: 0A, 3A, 6A, 9A, ..., 31A. The loading slope is 3A/10S. It is recommended that the maximum current value should not exceed 37.2A.

4. 燃料电池在不同运行电流下，输出功率不同，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，关闭负载（关闭负载有条件的情况下，以 5A 斜率 逐步缩小电流值，如当前电流设定为 31A，设定 26A、21A、.....、5A、0A，卸载斜率 5A/2S，起到保护燃料电池寿命作用），关闭氢气阀门，按下 控制盒 ON/OFF 按钮，关闭控制盒外接电源，风扇会全速转动，直至燃料电池中的氢气耗完

#### Shutting down the hydrogen fuel cell:

When preparing to shut down the fuel cell, turn off the load. If turning off the load is conditional, gradually reduce the current value with a slope of 5A. For example, if the current setting is 31A, set it to 26A, 21A, ..., 5A, and then 0A. The unloading slope is 5A/2S, serving to protect the lifespan of the fuel cell. Close the hydrogen valve, press the ON/OFF button on the control box, deactivate the external power supply to the control box, and the fan will operate at full speed until the hydrogen in the fuel cell is depleted.

#### 6. 控制保护:

控制盒指示灯绿灯闪烁，燃料电池正常工作，指示灯红绿加交替闪烁，电池运行故障（高温或者运行电压低于保护值）。氢燃料电池运行电压不要低于 20V，电压低于 20V 控制板会保护，电堆会卸载直至停止工作。重新正常工作,需重新按 ON/OFF 按钮。如此操作无法解决报警工作，请联系我司工作人员。

#### Control Protection:

The control box indicator light flashing green indicates normal operation of the fuel cell. If the indicator light alternates between red and green, it signals a fuel cell operation fault (either high temperature or operating voltage below the protection threshold). The hydrogen fuel cell operating voltage should not drop below 20V. If the voltage falls below 20V, the control board initiates protection, leading to stack derating until it ceases operation. To resume normal operation, press the ON/OFF button again. If this procedure does not resolve the alarm, please contact our company's personnel for assistance.

## 注意事项 Precautions

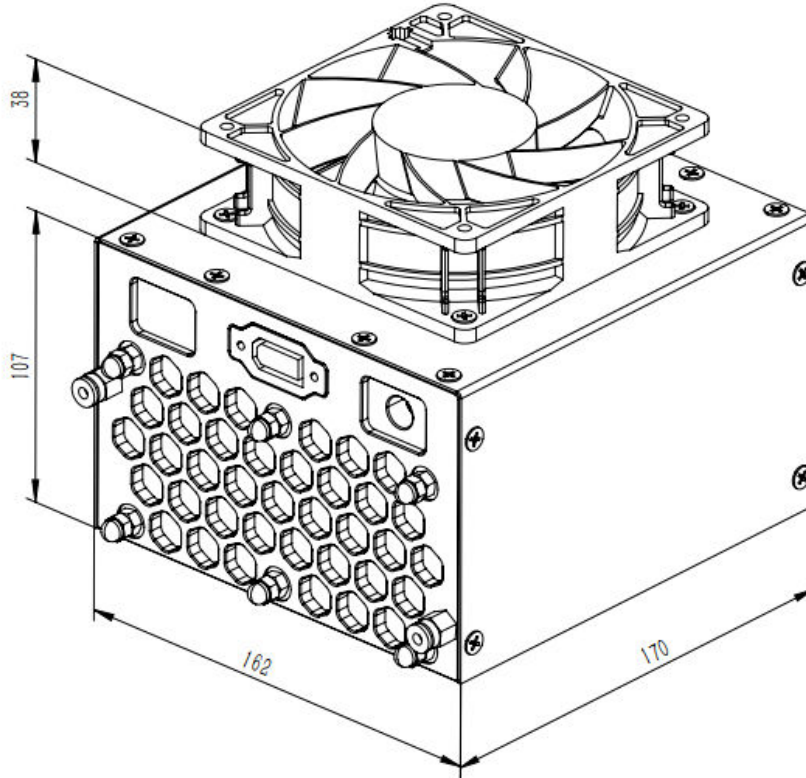
1. 当燃料电池运转时，一定要确保燃料电池中氢气的压力在0.05MPa，同时一定要确保足够的氢气流量。如果供氢系统中，氢气压力太高、太低或者流量不足都会对燃料电池造成损害。  
When the fuel cell is in operation, it is essential to ensure that the pressure of hydrogen in the fuel cell is 0.05MPa, as well as sufficient hydrogen flow. Damages to the fuel cell can occur due to a much higher, 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（否则损坏电池）。请在排气阀出口端使用 PU 管将排出的部分氢气远离电堆，防止余气吸入电堆会对电堆造成损伤！  
Ensure that the hydrogen fuel cell stack's hydrogen inlet is positioned upwards, and the stack exhaust outlet is facing downwards to maintain smooth drainage (tilting may damage the cell). Please use a PU tube at the exhaust valve outlet to direct released hydrogen away from the cell, preventing residual gas from entering the cell and causing damage!!!
3. 请将电堆在合适环境温度内进行使用  
Keep the stack at a suitable ambient temperature for use.
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。放置于阴凉处，最佳储存环境条件：20-25℃/30-60RH%  
When the battery system is not in use, please store it properly. Keep it in a cool place, and the optimal storage conditions are 20-25°C/ 30-60RH%.

## 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。  
Please read this manual carefully before operating the fuel cell stack, and keep this manual within reach during the operation.
2. 按照本说明书所列说明进行操作。  
Operate according to the instructions listed in this manual.
3. 禁止对 600W 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。  
It is forbidden to disassemble or modify the 600W fuel cell stack. Any modification to the stack will constitute a major safety hazard. SENZA Hydrogen Energy And Environmental Technology Co.,Ltd. is not responsible for any damage caused by unauthorized modification.
4. 600W 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。  
The 600W fuel cell stack consumes oxygen during operation. A well-ventilated environment is required to prevent hypoxia during operation.
5. 由于氢气属无色、无嗅的可燃气体，因此严禁在 600W 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。  
Given that hydrogen is a colorless and odorless flammable gas, smoking is strictly prohibited near the 600W fuel cell stack, and the fuel cell stack should be kept away from fire sources and heat sources.
6. 确保 600W 燃料电池电堆远离儿童。  
Ensure that the 600W fuel cell stack is kept away from children.

## 600W 氢燃料电池电堆

## 600W Hydrogen Fuel Cell Stack



600W Hydrogen Fuel Cell Discharge Curve

