

Smart H₂
Energy platform
COSBER

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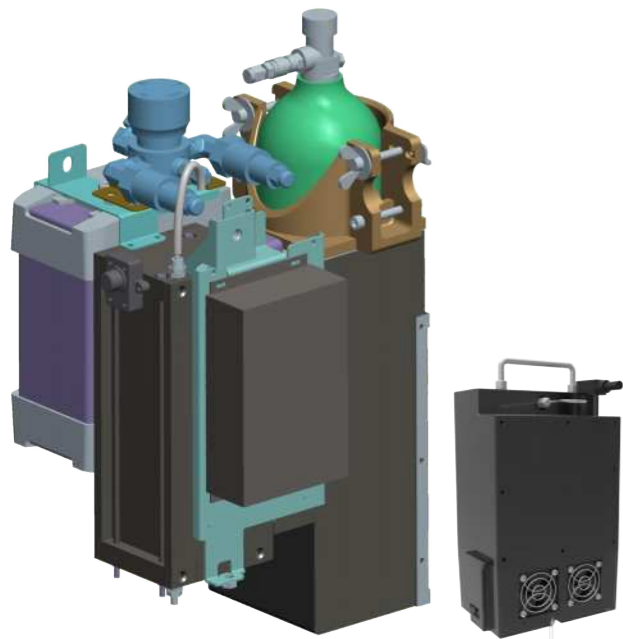
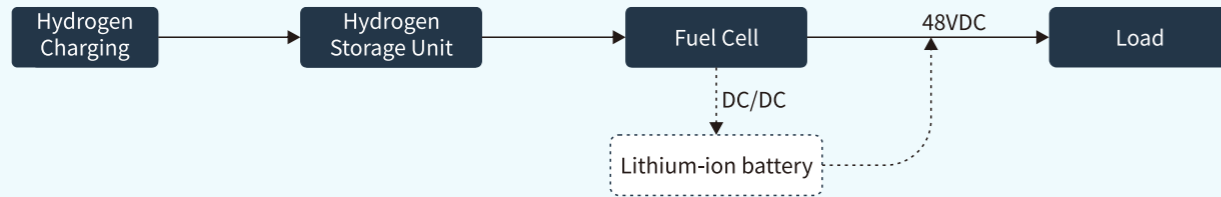
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300W Fuel Cell System (CSB300)

CBS300 is a power generation system using air-cooled fuel cells, built-in 48V/10 A lithium-ion battery. It has features of intelligent monitoring, small size, light weight, low noise, and environmental friendly. It can be applied to hydrogen energy two-wheeled vehicles, hydrogen energy mobile power and many other scenarios.

System Working Principle



Air-cooled Fuel Cell

Rated output	300W
Rated voltage	48V
Rated current	10A
Rated voltage range	36-54V
Max. power output	1440W@30s
Starting time	<20s@936W
Overload time	>1min@936W
Efficiency	≥40%@Rated power
Duration of system operation	≥2h@400W
Dimensions	(L×W×H) 276×230×480mm
Weight	16kg (Oxygen cylinder included)
Reported data	Equipment online status, hydrogen concentration, location information, lithium-ion SOC, remaining hydrogen



Hydrogen mobile backup power



Hydrogen sightseeing car

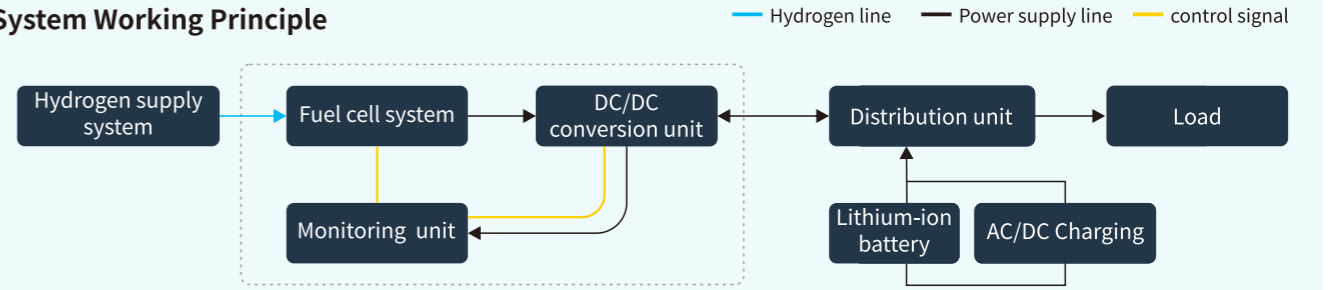


Hydrogen two-wheeler

3kW Fuel Cell System (CSB3000-M)

CSB-3000-M is an integrated design of a power generation unit and a hydrogen supply unit, each weighs under 40kg. Both units use quick-connect to operate as a complete system rapidly. This system has excellent mobility and reliability. Low noise and green, this system can replace diesel engines for emergency power generation.

System Working Principle



Rated output	3kW
Output voltage	43.2-57.6VDC
Starting voltage	48VDC
Power generation efficiency	≥43%
Generating unit dimensions	(L×W×H) 640×330×430mm
Hydrogen supply unit dimensions	(L×W×H) 900×470×440mm
Generating unit weight	38kg
Hydrogen supply unit weight	40kg
Gas bottle volume	28L@35MPa
Hydrogen purity	≥99.99%
Hydrogen consumption	0.7Nm ³ /kWh
Ambient temperature	-10~40°C
Store temperature	-40~60°C
Altitude	2000m
Noise	≤60dB
Ingress protection	IP44
Communication interface	CAN, RS485



Air-cooled fuel cell



Communication station



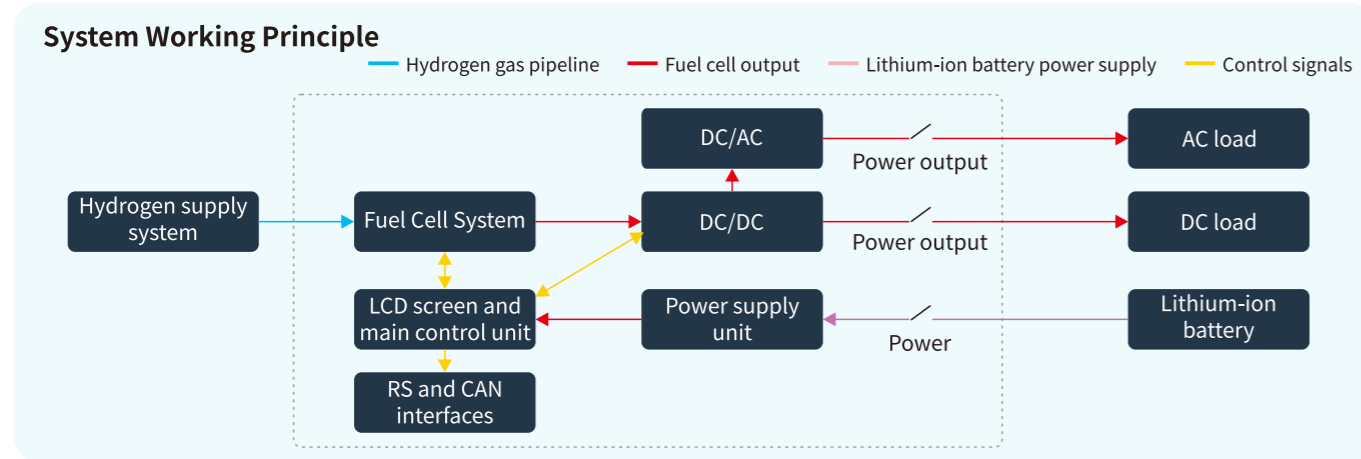
Field mapping



Camping

9kW Fuel Cell System (CSB9000)

The CSB9000 adopts a modular structure design, allowing flexible configuration of different power level stacks, with a maximum configuration of 9kW. It can achieve one-key startup and integrates various power requirements for DC/AC and DC/DC. Compared to traditional diesel engine power, it has advantages such as low noise and environmental friendliness. Compared to battery power, it offers higher energy density and reliability. In scenarios with higher power demands, it can operate in parallel with multiple units.



The hydrogen supply system provides the hydrogen needed for fuel cells, where hydrogen reacts with oxygen from the air inside the fuel cell stack to generate electricity through a chemical reaction. DC/DC and DC/AC converter units convert the variable voltage generated by the fuel cell stack into the voltage required by the load. The main control unit is responsible for signal acquisition, DC/DC output management, alarms, stack protection, communication interfaces, automatic startup, manual startup, and other functions.

Rated output power	9kW
Output voltage	12VDC, 24VDC, 380VAC off-grid
Output frequency	50Hz
Hydrogen inlet pressure	60kPa
Hydrogen conversion efficiency	≥40%
Dimension	(L×W×H) 700×650×1400mm
Weight	≤210kg
Hydrogen purity	≥99.99%
Hydrogen consumption	0.72Nm ³ /kWh
Operatin temperature	-20~55°C
Storage temperature	-5~55°C
Operating environment humidity	0~95%RH
Ingress protection	IP44
Communication interface	CAN2.0B



Air-cooled fuel cells



Laboratory



IT Server Room



Microgrid Construction

10kW+ Fuel Cell Systems

Cosber's fuel cell generation products use proton exchange membrane fuel cell technology. The systems are compact with small footprint, and capable of fast-start and shutdown. They are easy to achieve automatic control and unattended, suitable for distributed and centralized power, generation purposes.



DC Output Cabinet



AC output cabinet



Customized cabinet

Product specifications

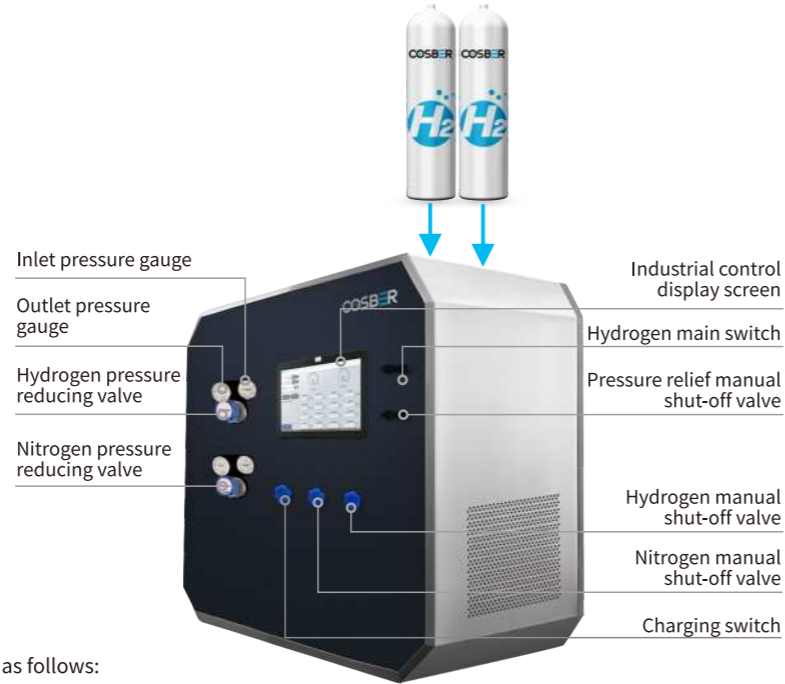
Type	C-FCS-10D	C-FCS-10A	C-FCS-30D	C-FCS-30A	C-FCS-50D	C-FCS-50A
Item	DC Output	AC Output	DC Output	AC Output	DC Output	AC Output
Net output (kW)	10		30		50	
Output mode	Grid connection		Grid connection		Grid connection	
Fuel cell system number/set	1		1		1	
Output pressure (V)	DC40-65V	AC 380V, 50Hz	DC500-700V	AC 380V, 50Hz	DC500-700V	AC 380V, 50Hz
Dimension (L×W×H) (m)	0.9x0.8x1.25		1.3x0.9x1.4		2.3x1.3x2.3	
Weight (ton)	0.2	0.25	0.5	1.2	0.7	1.5
Efficiency (LHV, Waste heat utilization)	45% - 53%	41% - 48%	49% - 57%	47% - 55%	46% - 57%	44% - 55%
Efficiency (LHV, Self heat dissipation)	44% - 52%	39% - 46%	47% - 57%	46% - 55%	45% - 57%	43% - 55%
Environment temperature (°C)	-10°C to +40°C		-30°C to +45°C		-30°C to +45°C	
Humidity (%RH)	0-95		0-95		0-95	
Start duration (s)	<30		<30		<30	
Low temperature start (min)	<15min @ -10°C		<15min @ -30°C		<15min @ -30°C	
Hydrogen inlet pressure (MPa)	0.6-1		1±0.1		1±0.1	
Hydrogen purity	≥99.97%		≥99.97%		≥99.97%	
Hydrogen flow rate (Nm ³ /h)	≤9.3		≤22		≤40	
Hydrogen inlet temperature (°C)	≤50		≤50		≤50	
Noise (db)	≤75		≤75		≤75	
Communication	Support CAN, mosbus RTU, modbus TCP					
Power	1kW, AC220V			5kW, AC220V		

Note: Off-grid mode, storage battery, and low hydrogen inlet pressure mode can be configured as needed.

Dual-Pack Metal-Hydrogen Charging Platform

This system consists of an operational panel, a main water tank cabinet, a chiller, a hydrogen gas detector, etc. Users may assemble the chiller to the main water tank cabinet, and then install the hydrogen gas detector above the main cabinet at a reliable position.

Charging quantity	Two channels
Hydrogen charging pressure	10~25bar
Inlet relief valve start value	200bar
Chiller (accessory)	Temperature control range 5~35°C
Hydrogen gas detector (accessory)	High concentration sound and light alarm
Dimension	(L×W×H) 850×450×750mm



Operating environment

1. The normal operating temperature and humidity range is as follows:

Ambient temperature	0-40°C
Relative humidity	10-95%

Note: The working medium of the accessory chiller is liquid water, so the normal operating temperature of the entire equipment should be above 0°C. In operations below freezing (-20°C and below), the chiller can be omitted, and no liquid water should be injected into the tank.

2. For safety considerations, it is prohibited to use this system in small enclosed spaces. It is required to operate in well-ventilated spaces because hydrogen leakage could pose a significant risk. Also, avoid operations near open flames. It is recommended to have portable fire extinguishing equipment such as dry powder and carbon dioxide on-site.

3. Hydrogen purity requirements for hydrogen supply equipment:

Type	Gaseous hydrogen	Bottle pressure not exceeding 150 bar
Composition	99.99% hydrogen	Purity requirement of 99.99% or higher
Humidity	Dry gas	No special requirements
Allowable impurities	Inert gases (nitrogen, oxygen, nitrous oxide, water vapor)	<0.01%
	Hydrocarbons	<1ppm
	Oxygen	< 220ppm
	Carbon monoxide and carbon dioxide mixture	<1ppm
	Sulfides	< 0.1ppm
	Ammonia	<0.05ppm
	Nitrogen oxides	<0.5ppm

Main interface of the dual-pack charging platform software

Three major functional modules of the control system

1. Electromagnetic valve switch and timing control
2. Operation log and exit
3. Real-time system data



Note