HETS-PWE-S Series Electrolyzer Test System (PEM)

The HETS-PWE-S Series aims to provide an accurate, reliable and convenient platform for testing PEM electrolyzers. It mainly consists of the gas-water separation unit, gas concentration monitoring unit, gas cooling and drying, hydrothermal management unit, linkage pressure control unit, measurement control unit, and safety protection unit. Through online data monitoring and processing by the system platform, the performance, lifetime, reliability and safety of the electrolyzer under test can be analyzed. The series applies to the R&D, verification and EOL testing of PEM electrolyzers.

Fast Dynamic Response

Fast regulation of programmable power supply, temperature/pressure/flow

Wide Range

Boundary test with wide power range: 5%~150% and wide gas pressure range: 100kPag-4MPag

Unattended Operation

Support script editing and step import, one click to start/stop the test

High Accuracy

Temperature control accuracy in water circuit: ±1℃, pressure: ±20kPa, gas flow: 0.8%RD+0.2%FS

Water Purification

In-situ on-line detection of conductivity ≤0.5uS/cm

Rapid Sampling

H_2 in O_2 sampling fetch time ≤2min after reaching stable state

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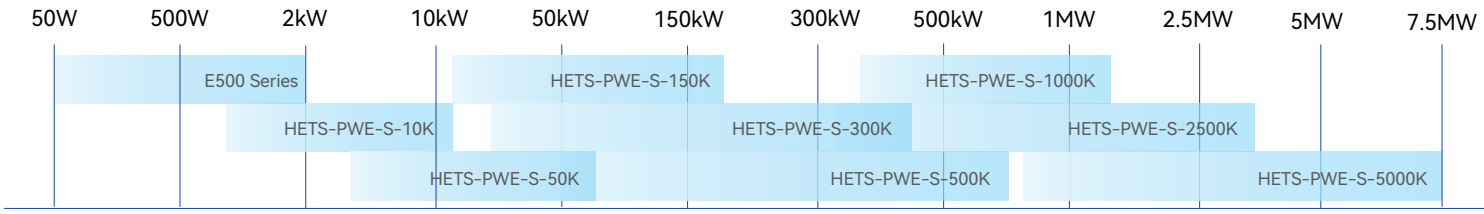
PEM Electrolyzer Test System Product Portfolio



Test Items

- Polarization curve test
- Durability test
- Online detection of DI water conductivity on anode side
- Stressor test
- Cell consistency test
- Online detection of O_2 concentration in H_2

System Parameters

Model		HETS-PWE-S-10K-G	HETS-PWE-S-50K-G	HETS-PWE-S-150K-G	HETS-PWE-S-300K-G	HETS-PWE-S-500K-G	HETS-PWE-S-1000K-G	HETS-PWE-S-2500K-G	HETS-PWE-S-5000K-G
Rated power		10kW	50kW	150kW	300kW	500kW	1MW	2.5MW	5MW
Power operating range		5%~150%							
H_2/O_2	Max. H_2 flow	50NLPM	15Nm^3/h	45Nm^3/h	90Nm^3/h	150Nm^3/h	300Nm^3/h	750Nm^3/h	1500Nm^3/h
	H_2 pressure range	0.1~4.0MPa							
	Max. O_2 flow	25NLPM	7.5Nm^3/h	22.5Nm^3/h	45Nm^3/h	75Nm^3/h	150Nm^3/h	375Nm^3/h	750Nm^3/h
	O_2 pressure range	0.1~4.0MPa							
	Differential pressure control	Support gas equi-pressure and differential pressure control on both sides; pressure difference≤±20kPa under equi-pressure conditions, pressure difference≤4.0MPa under differential pressure conditions							
Circulation	Flow measurement range	1.5~30NLPM	0.2~2.5m^3/h	0.7~14m^3/h	1~20m^3/h	1.5~30m^3/h	2~40m^3/h	5~100m^3/h	10~200Nm^3/h
	Flow control accuracy	≤±1%F.S.							
	Media	30%KOH solution							
	Temperature control range	RT+5℃~95℃, control accuracy ≤±1℃ (steady state)/±2℃ (dynamic)							
	Pre-heating rate	≥3℃/min							
	Automatic water make-up	Yes							
Detection	O_2 in H_2 sensor	0~5%vol, ≤±1%F.S., can be calibrated for smaller ranges							
	H_2 in O_2 sensor	0~5%vol, ≤±1%F.S., can be calibrated for smaller ranges							
Cell voltage monitoring	Channel	Max. number of channels: 1024, -5~5V@1mV							
Complete system	Controller	PLC							
	Communication protocol	Modbus, Ethernet, etc.							
	Remote operation interface	LAN							
	Power distribution	AC380V, three-phase five-wire							
	Ambient temperature	5~45℃							

Note: Products with power ≥50kW adopt fully explosion-proof design.

Optional Configurations

- O_2 flow, O_2 in H_2 detection
- Containerized solutions
- Gas purification device
- Customization of power supply for H_2 production
- AC impedance testing