Kewell

E500 Series

PEM Electrolyzer Multi-Channel Test System for Testing Single Cells

Product Introduction

The E500 series PEM electrolyzer multi-channel test system (for testing single cells) provides an accurate, reliable, and efficient normal/high-pressure testing environment for PEM water electrolyzer cell. The overall design adopts a modular approach, equipped with standard test channel units as well as professional test channel units. It can be expanded based on usage requirements, allowing for the combination of channel numbers and module functionalities. Additionally, it supports a wide range of optional features to meet the needs of various application environments.

- Polarization curve
- Durability testing
- Stressors testing
- Material screening testing
- Online detection of hydrogen concentration
- Activation test
- Consistency analysis of each electrolyzer cel
- Online conductivity test of DI water on the anode

Product Features

- Support the testing requirements for electrolyzer proposed by EU JRC.
- Meet 5%~150% wide power operating conditions.
- Meet a wide pressure range of 100kPag-4MPag gas production
- High accuracy control: water flow(1% F.S.), water temperature(±1°C), electrical conductivity (≤0 .5μS/cm), hydrogen/oxygen automatic backpressure(≤20KPa), uniform pressure and differential pressure control (max. differential pressure 4MPa).
- Automatic control: water replenishment and replacement, nitrog en purging, integrated measurement and security protection.
- EIS testing function, supporting fixed frequency and sweep frequency modes.
- PC software platform: parameter tags, custom scripts, custom functions, custom curves, and custom interfaces.
- Support 24/7 hours unattended operation.
- Hardware protection function: gas pressure monitoring, insulation monitoring, hydrogen leakage, temperature abnormality, manual emergency stop, emergency exhaust, independent safety unit.
- Software protection function: Heartbeat monitoring, automatic processing of three-level security alarm, etc.
- Positive pressure type explosion-proof (≥50kW) PLC cabinet, electrical cabinet, CVM cabinet.
- Excellent equipment manufacturing process: The pipeline manufacturing adopts 316L stainless steel material and undergoesmultiple processes such as acid washing, passivation, electrolysis, and polishing etc.

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Technical Parameters

Model		E500-12C
Maximum number of channels		12
Features		**Primary units**
Hydrogen & Oxygen unit	Hydrogen flow range	0.3~10L/min
	Oxygen flow range	0.15~5L/min
	Gas pressure range	Low pressure version: normal pressure~0.2MPa; High pressure version: normal pressure~4MPa.
Water supplement control system	Water flow range	1.5~8L/min
	Temperature control range	RT+5℃ ~ 90℃, solution 0.1℃
	Water purification function	Equipped water purification function and automatic conductivity control(conductivity ≤1us/cm)
	Automatic moisture separation	yes
Cell voltage inspection	Detection channels	Customized according to clients needs
	Measuring range	(-5~5)VDC
	Measurement accuracy	±1mV
	Alarm system	Configurable alarm limits, voltage difference alarms & protection values
Power unit *	Voltage accuracy	Single cell: Voltage : 0.1%F.S. Current: 0.1% F.S.
	Power functions	Independently CC, CV testing on each channel
	Data acquisition	Monitoring and logging current, power, single cell voltage on each channel
General specifications	Control system	PLC
	Remote operation interface	LAN
	Power supply	AC,380V, 3-phases 5-cables
	Ambient temperature	0~45℃

Unit version	Standard version channel unit(N)	Professional version channel unit(P)
Number of channels for single unit	4 channels per unit (low voltage)	1 channel per unit
Number of units	Max. 8 units, Cross-version compatibility supported	
Oxygen flow rate of single channel	25~500 mL/min	
Hydrogen flow rate of single channel	50~1000 mL/min	
Range of water flow rate	Measurement accuracy: 3% for normal pressure or 1% for high pressure; Manual adjustment	Measurement accuracy: 1%; Automatic adjustment
Extended temperature adjustment range	无	0-20℃
Current range	0-125A	
Back pressure	Comment pressure control on multiple channels	Independently pressure controlon cathode; Comment pressure control on anode
Accuracy of temperature control	±1℃	
Other	/	Independently self-adjusting of flow rate, pressure, and temperature
Extended optional functions	/	Monitoring of hydrogen flow rate and hydrogen concentration

* The voltage, current range and accuracy in the above table can be customized according to customer needs.

Optional Functions

- Online hydrogen concentration detection.
- Online hydrogen flow rate detection.
- Fixtures for High/low pressure.