

FCTS-S Series Fuel Cell Stack Test System

- . Polarization curve test
- . Fuel cell stack sensitivity test
- . Consistency analysis on the output characteristics of each cell



Summary

Fuel Cell Stack Test System (FCTS-S) is engineered to provide a stable test platform for fuel cell stack. Ideal for stack performance evaluation and the R&D process of fuel cell stack.

Functions

- Polarization curve test
- Fuel cell stack sensitivity test
- Consistency analysis on the output characteristics of each cell
- Starting performance test
- Steady state performance test
- Dynamic state performance test
- Activation test
- Durability test
- Real-time monitoring & alarm system

Advantages

- Complete safety control & monitoring: Hydrogen concentration detector, insulation impedance detection, single cell voltage inspector, safe PLC
- AC impedance tester
- Three-level protection
- Dry gas bypass. Automatic back pressure control over both anode and cathode loops
- Dual operation mode: Manual/Auto; Self-inspection before testing
- Reserved hydrogen circulating pump interface
- Selected components
- Debugging mode fit for R&D testing
- Work step import triggers quick testing
- Support direct input of test parameters via LUT (look up table)
- Versatile test curves; Easy to look up
- Flexible setting of protection parameters

Models & Specifications

Items		FCTS-S-30	FCTS-S-60	FCTS-S-80	FCTS-S-100	FCTS-S-120	FCTS-S-150	FCTS-S-200
Gas Flow Control	Anode flow range	10-1500 SLPM	15-1500 SLPM	20-2000 SLPM	25-2500 SLPM	30-3000 SLPM	40-4000 SLPM	50-5000 SLPM
	Flow control precision	±(0.8%Rdg+0.2%FS)						
	Response time	100ms						
	Cathode flow range	30-3000 SLPM	45-4500 SLPM	60-6000 SLPM	80-8000 SLPM	100-10000 SLPM	120-12000 SLPM	150-15000 SLPM
	Flow control precision	±(0.8%Rdg+0.2%FS)						
	Response time	100ms						
	Nitrogen purging	Available (before & after the test)						
Gas Pressure Control	Back pressure control range	(Stack resistance+15) kPa~300kPa						
	Back pressure control precision	±2kPa (steady state, no hydrogen cycle, no pulse emission)						
	Pressure detection precision	<0.5%FS						
Gas Humidification Control	Humidification method	Bubbling+Atomizing spray						
	Dew point temperature range	40~80°C (operation pressure≥0.2bar) 40~85°C (operation pressure≥1bar) 40~90°C (operation pressure≥1.5bar)						
	Dew point temperature control precision	±1°C						

Gas Heating Control	Temperature control range	40~95°C						
	Temperature control precision	±1°C (steady state)						
	Temperature detection precision	±0.5°C						
Stack Cooling System	Cooling method & medium	Water cooling circulation+Secondary water cooling (deionized water)						
	Flow detection precision	±1%FS						
	Temperature control range	40~95°C						
	Temperature control precision	±1°C						
	Water supplement	Automatic water supplement+Exhaust						
	Voltage range	24~800V						
	Current range	0~600A	0~600A	0~800A	0~1000A	0~1000A	0~1000A	0~1000A
Single Cell Voltage Inspection	Detection channels	Max. 800 (optional)						
	Measurement range	(-5~5) Vdc						
	Measurement Precision	±1mV@(-2~2Vdc)						
	Protection/alarm	Alarm limits, battery voltage deviation alarm, and protection can be set.						
Hydrogen leakage detection	Hydrogen leakage detection	1000-40000ppm (Alarm value can be set.)						
	Insulation impedance detection	Impedance protection value can be set.						