Hydrogen production testing solutions

As the biggest professional machinery manufacturer in Bosch China, the business scope of Bosch Manufacturing Solutions covers all kinds of assembly and testing equipment, flexible and innovative software solutions and related services. It is committed to providing Bosch worldwide plants and customers with special machinery and professional manufacturing solutions that meet European quality standards.

In the field of hydrogen energy, Bosch Manufacturing Solutions division and its partners cooperate deeply with complementary advantages, work together to provide customers with tailored intelligent assembly and testing equipment in hydrogen production and fuel cell field, aim to support Bosch and local hydrogen energy enterprises maximizing their value.

PEM Electrolyzer **Testing**

Test Bench Functions

1	PEM electrolyzer polarization curve testing
2	PEM electrolyzer hydrogen production performance testing
3	PEM electrolyzer power consumption testing
4	PEM electrolyzer startup/shutdown testing
5	PEM electrolyzer efficiency testing
6	PEM electrolyzer water consumption testing
7	PEM electrolyzer power variation performance testing
8	PEM electrolyzer hydrogen production change testing

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PEST Series PEM Electrolyzer Test Bench Datasheet

Items	Parameters	Unit	PEST-50	PEST-300	PEST-1500	Remark
Available power range up to [standard]		kW	50	200	1500	
Gas flow	Cathode gas [H_2]	Nm^3/h	0.25~18	1~72	22~300	
		NL/min	4.2~300	16.7~1200	367~5000	
	Anode gas [O_2]	Nm^3/h	0.12~9	0.5~36	11~150	
		NL/min	2~150	8.3~600	183~2500	
Gas Pressure	Gas back pressure	bar(a)	1~50			
	Anode & Cathode pre-pressurization gas [N_2]	bar(a)	Max. 50			
Gas composition	H_2 concentration in O_2	%Vol	0~2			optional range
	O_2 concentration in H_2	%Vol	0~2			optional range
	N_2 concentration in O_2	%Vol	0~100			optional
	N2 concentration in H_2	%Vol	0~100			optional
Anode Water Circulation System	Cooling power	kW	15	60	450	
	Coolant flow	L/min	50	300	2300	
	Coolant inlet temperature	℃	RT~95			
Conductivity Measurement	Conductivity Measurement Position	/	DI water supply,Inlet of stack, Separator in Anode and Cthode			
	Coolant conductivity	μS/cm	0.05~20			
	Coolant conductivity accurancy		0.5%RD			
Electric source	Power up to	kW	50	300	1500	
	Voltage up to	V	80	80	800	
	Current up to	A	5000	5000	5000	
CVM	Channels	/	50	150	300	
	Voltage	V	-3~+3			
	Sampling	Hz	10			
Safety Configuration	Nitrogen Purge		Safety Function			
	Safety PLC	/	Independent Pilz safety PLC			
	Hydrogen sensor	/	2 sets (1 sets in test chamber and technical chamber each)			
	Oxygen sensor	/	2 sets (1 sets in test chamber and technical chamber each)			
	Smoke detector	/	2 sets (1 sets in test chamber and technical chamber each)			
	Test bench ventilation	/	EX-proof exhaust fan, with 1 set of flow sensor and 2 sets of flow switch			
Equipment Dimenson	Width x Depth x Height	mm	1600 x 4600 x 2200	2600 x 6500 x 2500	3000 x 8000 x 2500	
Options	• Additional extended interfaces (thermocouples; analog; digital; CAN, etc.) • EIS system • N_2 flush			• CVM and electrolysis power supply can be configured according to customer needs • Qualified third-party HAZOP assessment • Cathode DI water loop		

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