

Water Electrolysis Hydrogen Production And Storage Educational Pilot Plant

Item Number: LPK-DJSZQ



Introduction

Integrated pilot-scale training system for higher education engineering labs. Features AWE/PEM electrolysis, adjustable DC power, PLC controls, gas-liquid separation, and pressurized hydrogen storage. Hands-on learning in green hydrogen, process control, and safety, ideal for chemical and energy departments.

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System Component / Parameter	Specification / Feature	Associated Educational Experiment / Activity
Electrode Configurations	Compatible with Alkaline Water Electrolysis (AWE) and Proton Exchange Membrane (PEM) modules	Comparison of electrochemical efficiency, current density, and membrane transport properties.
Dosing & Circulation System	Quantitative metering pumps, corrosion-resistant circulation loops, and raw material replenishment tanks	Studies in mass transfer, solution preparation, electrolyte concentration effects, and fluid dynamics.
Power Control Unit	Adjustable DC power supply with integrated voltage and current logging	Faraday's Law verification, voltage efficiency calculation, and polarization curve plotting.
Separation & Storage	High-efficiency gas-liquid separators and pressurized stainless steel hydrogen storage vessels	Gas-liquid equilibrium studies, pressurization dynamics, and compressed gas storage operations.
Instrumentation & Control	Digital flowmeters, pressure transmitters, temperature sensors, and touchscreen PLC interface	Process control loop tuning, system safety interlock testing, and real-time data acquisition.