600 Electrolyzer Test Station

A bench-top fully-integrated instrument for R&D testing

The 600 Electrolyzer Test Station (ETS) is ideal for labs requiring detailed control, diagnostics and analysis of electrolyzer cells.

The 600 features

- 4 current range Potentiostat
- ±0.07 / 0.7 / 7 / 20 A, ±5 V, 100 W
- Programmable Power Supply for operation up to 100 A, 5 V, 500 W
- Automated switching between Potentiostat and Power Supply mode
- Mass flow meters for real-time O_2 and H_2 product flow rate monitoring
- EIS and HFR in Potentiostat mode
- EIS data compatible with *ZView*®, the world's leading impedance analysis & equivalent circuit modelling software
- Whole cell voltage plus two high-impedance reference electrode inputs for half-cell data
- *FlowCell-ETS*® application software for complete system control, experiment sequencing, graphing and data acquisition
- Integrated back pressure to 2 bar_g
- N_2 purge on Cathode with Supplemental N_2 on Anode
- Anode feed water recycling or once-thru operating mode
- In-line high-temperature Ion Exchange cartridge to maintain Anode feed water purity in recycle mode
- Integrated 892e Data Expansion Module for additional 8 temperature + 8 analog inputs, e.g., pressure transducers
- Safety features: E-Stop, Over Voltage/Current, Over Temperature, Product Gas Cross-Contamination

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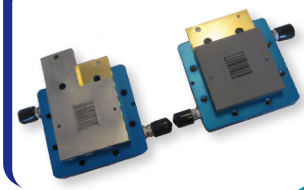
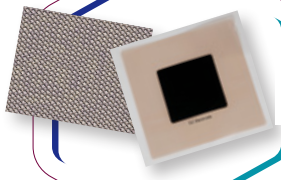
OPTIONS

Gas Sensors



Electrolyzer Cell Fixture with Pt-Ti Flow Field



Pt-Ti Mesh and MEA

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SPECIFICATIONS: 600 Electrolyzer Test System

Cell Connections:

Cell Connection	4-terminal (I+, I-, V+, V-) & differential Aux (REF)
Cell Potentiostat:	
Full Scale Current Ranges	±20 / 7 / 0.7 / 0.07 A
Current Resolution	0.007% of range
Current Limit of Error	±1.0% of range
Set and Read Voltage vs . WE	> ±5.000 V
Cell Voltage Sense Lead	Differential w/ driven shields
Voltage Measurement Resolution	152 µV
Sense Lead Input Resistance	1.0 GΩ
Modes of Operation	Constant, Scan, Step-Stair; V and I
Cell Power Supply:	
Maximum Current	100 A
Voltage Range	0 - 5.000 V
Power	Up to 500 W
Impedance Measurement (Potentiostat Mode):	
Frequency Range:	1 mHz to 10 kHz
Measurement Types	Sweep EIS and single-frequency HFR real-time measurement, Whole Cell and Aux

Cell and Electrolyte Handling:

Flow Path	All 316 SS
Feed Water Reservoir	1 L, 316 SS, auto-water fill, conductivity probe
Feed Water Supply Pump	50 – 400 mL/min, software controlled
Feed Water Temperature Range	Ambient to 95 °C
Ion exchanger / Deionizer	In-line water recycling loop
Back Pressure	Dual, 0-2 bar_g (0-30 PSIG), Manual
Cell Temperature Range	Ambient to 120 °C
Purge Gas	PC-controlled MFC on Negative; Manual on Positive
Water/Gas Separator/Dehu-midifiers	2 (Negative, Positive), condensers & collection tanks
Product Mass Flow Meters	2 (1 SLM H_2, 0.5 SLM O_2)
Additional Data Acquisition (892e):	
Data Acquisition (892e):	8 Temperature + 8 Analog (e.g., 0-5 V, 4-20 mA)
Options:	
In-Line Gas Sensors	H_2 Transmitter for monitoring of H_2 in Product O_2 O_2 Transmitter for monitoring of O_2 in Product H_2
Physical and Environment:	
Operating Temperature	5-35 oC
Power Source	100-120 or 220-240 VAC, 50/60 Hz
Size (excluding tubing connections)	53 cm x 53 cm x 90 cm (21 in. x 21 in. x 35.5 in.)
Weight	64 kg (140 lb.)