

620 2ND GENERATION

Fully-Integrated, Bench Top, Instrument for Proton Exchange Membrane (PEM) & Anion Exchange Membrane (AEM) Water & Liquid Alkaline Electrolysis

**Alkaline Flow Path Upgrade:
96% Reduction in Ferrous Materials**

FEATURES

ADVANCED DIAGNOSTICS

Electrochemical Impedance Spectroscopy (EIS) & High-Frequency Resistance (HFR) Over Full 100 A Current Range

Automated Switching Between Potentiostat & Power Supply For High Resolution Measurement Over Full Current Range

Expanded Data Collection & External Sensor Integration

Half Cell Measurements

UNATTENDED OPERATION

Conductivity Monitoring, Smart Feedstock Management With Automatic Filling, Mixing & Balancing, Self Draining Condensation Tanks, & Electronically Controlled Purge Gas

Firmware Level, Robust, Safety Monitoring & Alarms

INTUITIVE CONTROLS



FlowCell®

FlowCell-ETS® Fully Integrated Software For Control, Experimental Sequencing & Graphing



ZView®

ZView® World's Leading Impedance Analysis & Equivalent Circuit Modeling



SPECIFICATIONS

ELECTRICAL

Power Supply Max Current:
100 A

Voltage Range:
0 – 5.000 V DC

Maximum Power:
500W

Potentiostat Current Ranges:
±20 / 7 / 0.7 / 0.07 A

Current Resolution:
0.007% of range

Current Limit of Error:
±1.0% of range

Set & Read Voltage:
>±5.000 V

Cell Voltage Sense Lead:
Differential

Voltage Measurement Resolution:
152 µV

Sense Lead Input Resistance:
1.0 GΩ

Modes of Operation:
Constant, Scan, Step-Stair; V and I

Impedance Frequency Range:
1 mHz to 10 kHz – Power Supply
1 mHz to 40 kHz – Potentiostat

Impedance Measurement Types:
Sweep EIS and Single-Freq HFR Real-Time Measurement, Whole Cell and Aux / Half / Reference

CELL & ELECTROLYTE HANDLING

Flow Path:
All 316SS

Liquid Feed Tanks:
2x 2L, Auto-Fill, Auto-Mix

Liquid Feed Concentration:
In situ KOH Conductivity

Liquid Feed Flow:
50 – 700 mL/min

Liquid Feed Temp:
Ambient – 95 °C

Liquid Filtration:
In-line De-Ionized Recycling Loop

Back Pressure:
Dual, 0 – 2 bar_g (0 – 30 psig), Manual

Purge Gas:
2x 0.5 SLPM N₂ MFC

Water / Gas Separation:
2x Auto-Draining Condensers

Product Mass Flow Measurement:
1 SLPM H₂ & 0.5 SLPM O₂

Additional Data Acquisition:
6 Temp & 6 Analog (0 – 5 V, 4 – 20 mA)

Cell Temperature:
Ambient – 125 °C

Cell Connection:
4-Terminal (I+, I-, V+, V-) & Differential Aux (REF)

PHYSICAL

Operating Temperature:
5 – 35 °C

Power Source:
100 – 120 or 220 – 240 VAC 50/60 Hz

Size (Excluding Connections):
53 x 53 x 100 cm (21 x 21 x 39.5 in)

Weight (Empty):
~65 kg (140 lbs)

SAFETY

Robust:
Embedded Firmware Level Decisions

Fail Safe Design:
N₂ Purge On Alarm Condition

Continuous Monitoring:
E-Stop, Voltage, Current, Temperature, Gas Contamination & External Signals

External Alarm:
Integrate Full Building E-Stop

Software Alarm:
User Configurable Limits

Certification:



INTERNAL OPTIONS

TEFLON™ COATED FEED TANK

Adds extra corrosion resistance to the feed stock tanks by coating 316SS in durable Teflon™.

Reduce Iron Contamination of feedstock while holding KOH solutions for long periods of time at elevated temperatures.

SWAGELOCK® SC-11

Adds Cleaned for Oxygen Service tubing and fittings on the oxygen side of the product flow path.

Ensure No Organic Contaminates which can act as fuels in oxygen rich environments.

ALKALINE FLOW PATH

Reduce 96% of Ferrous Surface Area in the flow path of electrolyte from feed stock tank to cell fixture and back into feed stock tank.

Replaces 316SS with Inconel and PTFE Tubing and Fittings for superior corrosion resistance and limited Iron leaching

ACCESSORIES

SAFETY SENSORS

H₂ in O₂ & O₂ in H₂

Continuous Monitoring of Hydrogen gas in the Oxygen gas stream. Programable detection levels of product as they approach an unsafe ratio.

Alarm Condition places machine into safe configuration and purges with Nitrogen automatically.

GOW Sensor technology leveraging thermal conductivity to make direct comparison to ambient versus feed gas.



DI WATER SENSOR

External Inline Smart Probe

In-Line DI Water Conductivity monitoring via smart probe connected to 892 data acquisition module.

Easily Convert Between PEM & AEM setups with the same machine. No modifications needed to the test system, simply connect probe inline with cell fixture

Ultra-Low Conductivity sensor specifically developed for the measurement of pure water, ultra-pure water, and DI water.



AUTOMATIC ELECTROLYSIS PRESSURE REGULATOR

30 Bar Differential Pressure experiments with automatic back pressure control, automatic draining, and automatic purge control.

Two Phase Flow separation for highly stable control of back pressure, returns product to test system at ambient pressure.

Seamless Integration with Scribner's High-Pressure Cell Fixture, 600, 620 or other test systems, standalone software with robust safety monitoring.



CELL FIXTURES

PROTON EXCHANGE MEMBRANE

PEM Electrolyzer Cell Fixture superior performance for water electrolysis, with convenient porting, electrical heating, customizable materials and flow fields.



ANION EXCHANGE MEMBRANE

AEM Electrolyzer Cell Fixture offers customizable materials for chemical resistance and usability. Fluid is routed directly into flow field through end plate.



HIGH-PRESSURE ELECTROLYSIS

50 Bar Capable. Available in Aluminum Stainless Steel, and Nickel 200 End-Plates, as well as a wide range of Flow Field materials and patterns.



PRODUCT CONFIGURATION

LET'S CONFIGURE YOUR TEST SYTEM

If It Isn't On The Page, Let's Talk Customization

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X

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POWER SUPPLY

Code	Description
X	500W, 100A, 5V, EIS

THERMOCOUPLE CODE

Code	Cell Thermocouple Type
T	Type T

INTERNAL OPTION CODE

Code	Alkaline Feed Stock Conductivity Sensor	Teflon™ Tank Coating	Enhanced Corrosion Resistant Flow Path	SC-11 Cleaned Oxygen Product Flow Path
0	N	N	N	N
1	Y	N	N	N
2	Y	Y	N	N
3	Y	Y	Y	N
4	Y	Y	Y	Y
#	Custom Configuration, Please Contact Scribner With Your Requirements			

PLUG (VOLTAGE) CODE

Code	Plug Type
C	Chinese Plug (230V)
E	European Plug (230V)
N	North American Plug (120V)
U	UK Plug (230V)



EMPOWERING ELECTROCHEMISTRY

ABOUT US

We're the power behind the pioneers—advancing electrochemical research with precision instruments, deep expertise, and unwavering support.

More than a supplier, we're a trusted partner in innovation, removing technical barriers so scientists can focus on breakthroughs that shape the future.

From lab bench to global impact, Scribner makes complex research possible, precise, and scalable.

OUR EXPERTISE

Electrochemistry isn't just what we do—it's who we are. With decades of experience and industry-defining innovation, we deliver cutting-edge electrochemical instrumentation and expert insight that empower scientists to push boundaries.

Whether you're optimizing performance at the molecular level or scaling up for global impact, we provide the precision tools and partnership to turn possibility into progress.

Our product catalog includes:

- Fuel Cell Test Systems
- Electrolyzer Test Systems
- Membrane Conductivity Test Systems
- Redox Flow Cell Test Systems
- Battery Test Systems

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