

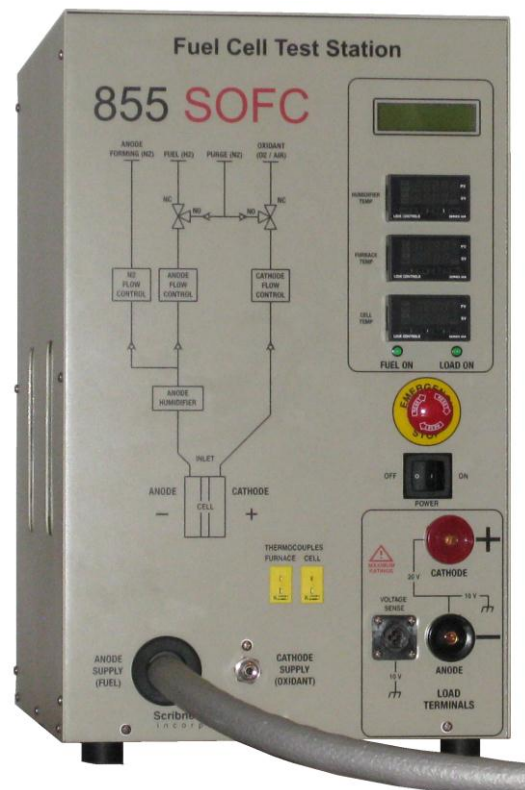
# 855 SOFC Fuel Cell Test System

**New!!!**  
**SOFC Test Solution**

- ✓ Zero Volt Capability for Lower Measurement Range
- ✓ Probostat Test Fixture and Furnace with Redundant Over-Temp Control Available
- ✓ High Performance & Accuracy
- ✓ FuelCell® Software Included
- ✓ Experimental Methods Manual Included
- ✓ Optional Impedance Spectroscopy & HFR
- ✓ Integrated, Turn-Key SOFC Test System

## Features:

- Suitable for SOFC Button Cells and Small Planar Cells
- Multi Range Electronic load 5/25/50 A, 100 W
- FuelCell® software for user-friendly computer-controlled cell operation & experimentation
- Stainless steel Anode humidifier with Bypass Valve
- Up to five mass flow channels available
- Includes Furnace Control hardware with redundant over-temperature protection
- Constant or stoichiometric-controlled reactant flow rate
- Constant current, voltage or power control modes
- Continuous resistance (iR) measurement
- Automatic hardware shutdown & purge gas for safe, reliable operation
- Multifunction front panel alpha-numeric display
- High impedance whole cell & reference electrode voltage sense inputs
- Cell main terminals & sense inputs tolerant of non-isolated cell
- USB Interface



## Available Options:

- ✓ Built-in 880 FRA for EIS & HFR
- ✓ Automatic Water Fill
- ✓ Anode & Cathode Multi-Gas Selector
- ✓ Reformate Simulation



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## Specifications:

### Electronic Load:

Maximum Load Current:	5/25/50 A
Maximum Load Power:	100 W
Minimum Load Resistance:	< 2 m $\Omega$ (100 mV @ 50 A at load terminals)
Current Resolution:	1 mA for 5/25/50A
Current Accuracy:	0.3 % of full scale current rating

### Voltage Measurement and Data Acquisition:

Maximum Whole Cell Voltage:	20 V
Maximum Reference Electrode Voltage:	9.999 V
Sense Lead Input Resistance:	> 35 k $\Omega$
Voltage Resolution:	1 mV
Voltage Accuracy:	$\pm 3$ mV $\pm 0.3$ % of reading
Voltage and Current Data Update Rate:	100 Hz

### Reactant Gas Control System:

All 316 SS construction of humidifiers, flow path, valves and mass flow controllers, with Swagelok® fittings

Mass Flow Control: Anode up to 1 SLPM and cathode up to 3 SLPM\*  
Software controlled mass flow controllers  
Automatic N<sub>2</sub> purge valves on anode and cathode

Alarm Inputs: Gas supply pressures (3), humidifier water level (1)  
Furnace over temperature (1), and external (1)

### Temperature Controllers:

Quantity: (3) Furnace, Anode Humidifier, Cell Temp  
Set and Report Accuracy:  $\pm 0.25$  % of span,  $\pm 1$  least significant digit  
Sensor Type: Thermocouple, Type K (R/S also Available)

### Temperature Limit Controller:

(1) Furnace Over-Temp

### Humidifier:

Type: Single Bottle-type Passivated 316L  
Manual Water Fill  
Automated Humidifier Bypass

### Environment:

Operating Temperature: 0 - 40 °C  
Power Source: 120 V, 50/60 Hz, ~ 900 W  
Enclosure Type: Single bench top enclosure  
Size and Weight: 18" H x 11" W x 19" D, 50 lb  
46 cm x 28 cm x 48 cm, 23 kg

Safety Features: Automatic shutdown and N<sub>2</sub> purge with under voltage, over-current, over-temperature, loss of reactant or purge gas pressure, furnace over-temperature limit, communications failure or external alarm. Manual Emergency Stop switch included for manual shutdown by operator.