

High-Power EIS Analysis

MegaEIS™ System ME-1L200

Up to 20 V • 200 A
Up to 4 kW



Simultaneous Two-Channel EIS



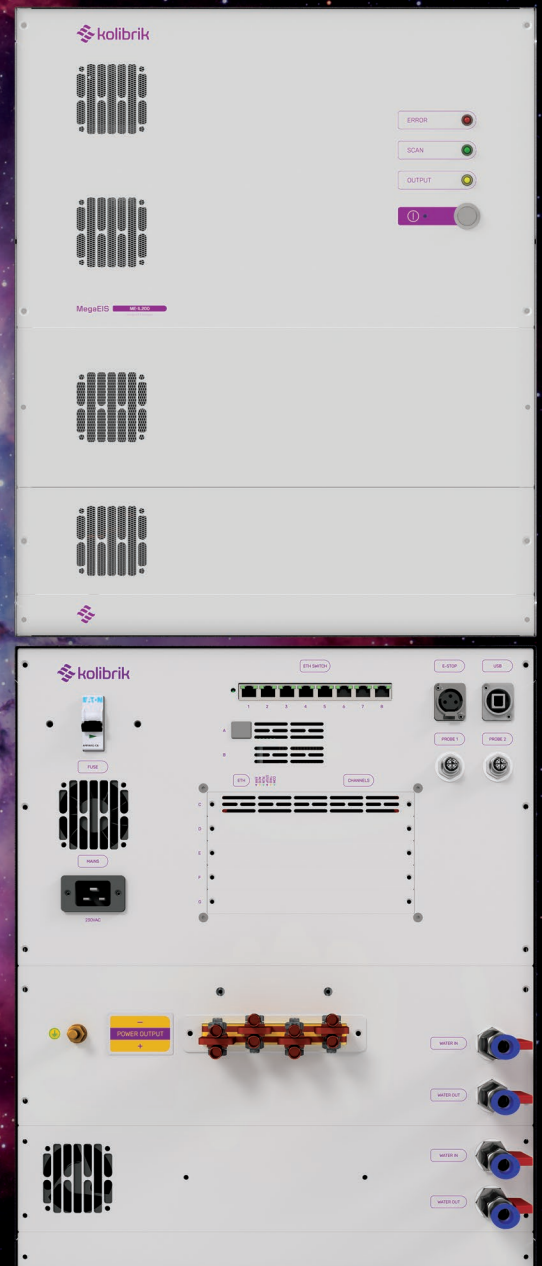
High-Current Capability



Precision & Reliability



Fuel Cell Stacks



MegaEIS™ System



Testing system for a variety of essential electrochemical methods • Two-channel EIS analysis of the stack as a whole • Precise current, voltage, and impedance measurement • Fuel cells and fuel cell stacks

Highlights

Simultaneous Two-Channel Measurement

MegaEIS™ provides one current sensor and two voltage sensors for complete stack measurement. Data acquisition runs simultaneously across all channels, making the system ideal for rapid and precise analysis in R&D, quality assurance in manufacturing, and service diagnostics.

Precise at High Currents

MegaEIS™ ME-1L200 handles high currents up to 200 A. The unique low-impedance current sensor ensures accurate measurement of both AC and DC currents flowing through the device under test (DUT).

Accurate and Reliable Data

Thanks to our state-of-the-art sigma-delta synchronized ADCs, you achieve exceptional 0.1% accuracy at a high speed of 1.25 Msps, ensuring precise and reliable measurements for your applications.

Technical Support

At Kolibri, we value close collaboration with our customers. Our technical team strives to provide support throughout the commissioning, implementation, and operation of the instrument.

Designed for EIS

Electrochemical impedance spectroscopy (EIS) is a powerful method for investigating the electrochemical processes occurring within the DUT, providing key insights leading to its improved performance and durability. The EIS frequency range extends from 1 mHz to 100 kHz, and the instrument offers impedance measurements with up to 1% accuracy.

Wide Range of Electrochemical Methods

MegaEIS™ offers DC cell voltage monitoring and supports a variety of essential electrochemical methods, including:

- Electrochemical Impedance Spectroscopy
- Cyclic Amperometry
- Cyclic Voltammetry
- Linear Sweep Voltammetry
- Linear Sweep Amperometry
- Constant Voltage
- Constant Current
- Chronopotentiometry
- Chronoamperometry
- Open Circuit Voltage

The instrument enables programmable sequencing of all available methods.

Technical Parameters



Power supply	110 ... 230 VAC / 50 ... 60 Hz	
Dimensions	Modular design for 19" rack cabinet	
Protection rating	IP20	
Input voltage	0 ... 20 V	
Input current	0 ... 200 A	
Maximum internal load power dissipation	4 kW	
Cooling	Water	
2x voltage probe	Up to ± 20 V	
Sampling	24-bit ADCs, low-noise 50/60 Hz filtered sampling Up to 1.25 Msps for EIS measurements	
Measurement resolution	0.001% of selected range	
Accuracy voltage	Voltage	$\leq 0.1\%$ of range + 0.1% of reading
	Current	$\leq 0.1\%$ of range + 0.5% of reading
Acquisition methods	constant V, I, open circuit, manual control chronoamperometry, chronopotentiometry linear sweeps, polarization curves, current interruption load cycling/profiling EIS – electrochemical impedance spectroscopy programmable sequences of all available methods	
EIS frequency	1 mHz ... 100 kHz	
EIS amplitude	Up to 20% of maximum internal current for < 1 kHz	
Connection	USB 2.0, Ethernet	
Software	Control software for MS Windows Features: measurement setup and control, data acquisition, processing and visualization, pascal or python scripting, remote control by TCP/IP server for integration with top-level control system, examples for remote control using Python or LabVIEW.	

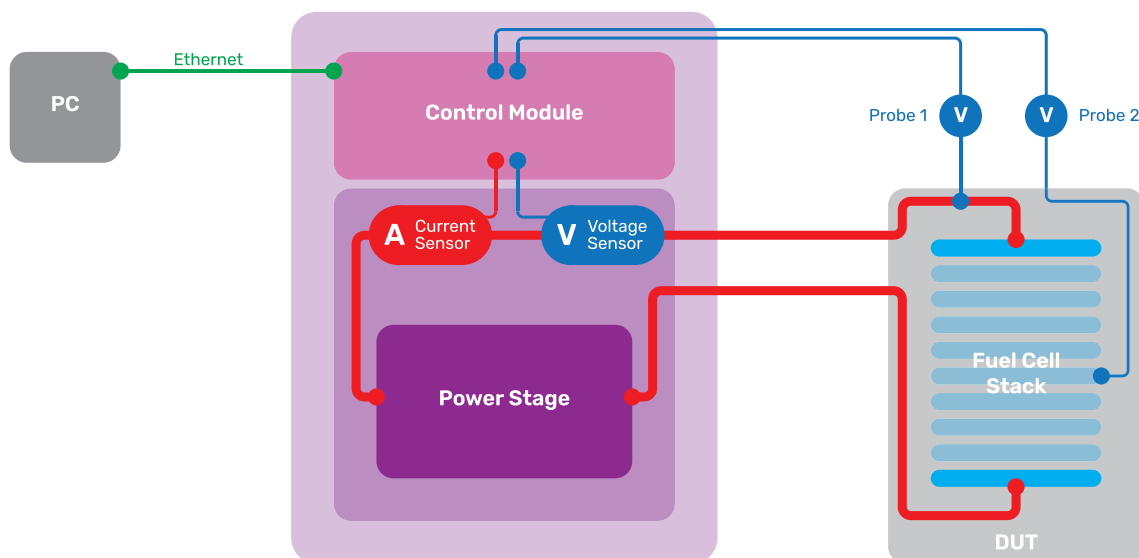
Applications



Fuel Cell Stack Testing

The MegaEIS™ ME-1L200 represents an ideal solution for fuel cell stack testing, including SOFC, PEMFC, AFC, MCFC, and PAFC. The two-channel EIS provides insight into both the overall state and performance of the stack, as well as of its individual components, simultaneously.

Block Schema



MegaEIS™ ME-1L200 connection schema with DUT (Device Under Test)

Have questions or need more details?

Contact us today and let us show you how Kolibrík can make a difference for you!

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