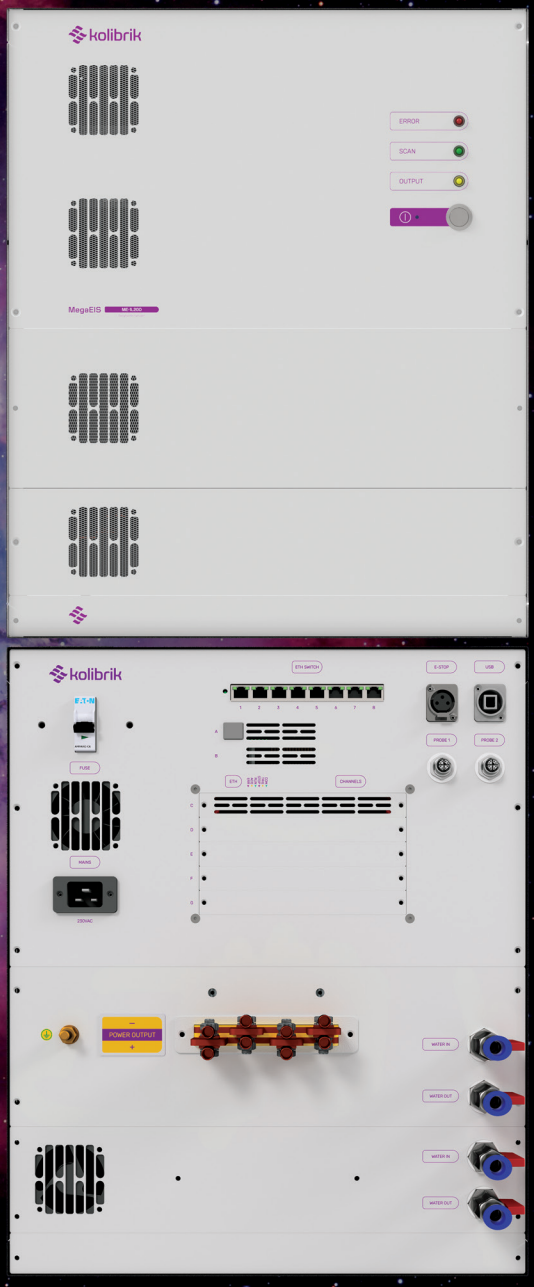
kolibrik

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

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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 Kolibrik, 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

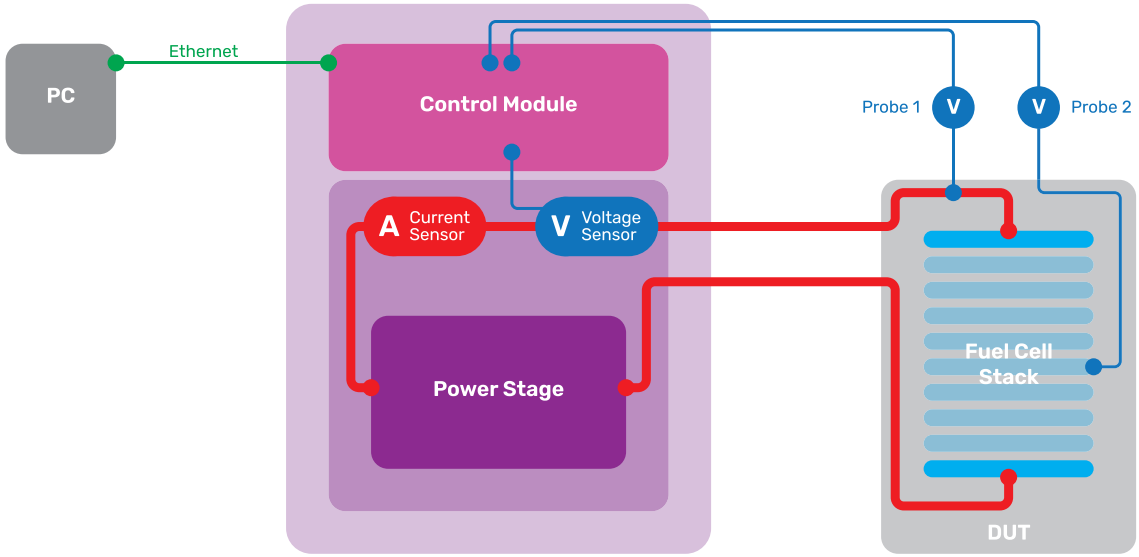
Power supply	110 … 230 VAC / 50 … 60 Hz, 3x 400 VAC for high-power devices
Dimensions	Modular design for 19“ rack cabinet
Protection rating	IP20
Input voltage	0 … 20 V
Total input current (internal + external load)	Up to 200 A
Internal load current	0 … 200 A
Maximum internal load power dissipation	4 kW
Cooling	Water
Stack electrometer voltage range	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 ≤ 0.1% of range + 0.1% of reading Current ≤ 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 the state and performance of the stack as a whole.

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 Kolibrik can make a difference for you!

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