HIOKI

EIS MEASUREMENT SYSTEM ALDAS-E

NEW

EIS
measurement
system

ALDAS
Active Line Device Analysis System

EIS Measurement During Operation of a kW-Class

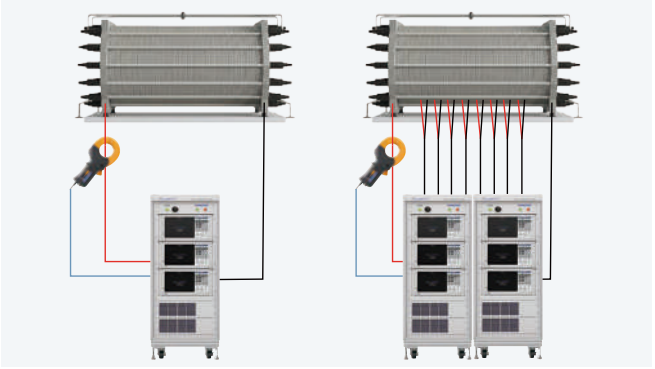
High-speed and high-precision cell stacks measurement

CE

EIS measurements during the actual operation of kW to MW class stacks

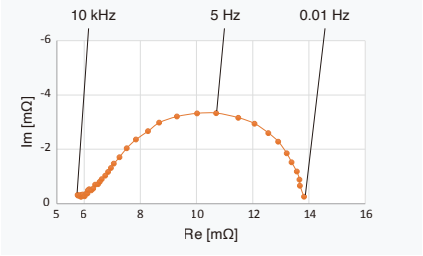
For large electrolysis cells where high currents flow from the rectifier to the stack in multi-wire configurations, multiple current sensors can be used in combination to measure currents up to 10 kA. This allows EIS measurements to be performed by detecting small AC signals amidst noisy DC currents while the cell is in operation.

Observe stack performance and multiple cell states simultaneously



Multi-channel measurement enables simultaneous tracking of total stack and individual cell impedance for comprehensive stack observation. This measurement system is expandable from 1 up to 48 channels.

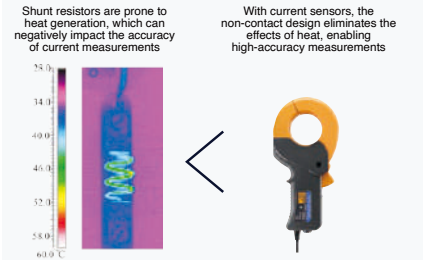
High-speed EIS measurement



Generally, impedance measurements in the low-frequency range are time-consuming. ALDAS contributes to shorter evaluation cycles with a measurement time as fast as 7.6 minutes*1.

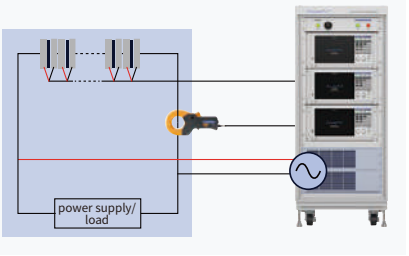
*1: Measurement conditions of 10 kHz to 0.01 Hz, 30 points, fast mode

Stable, high-accuracy measurement down to the low-frequency range

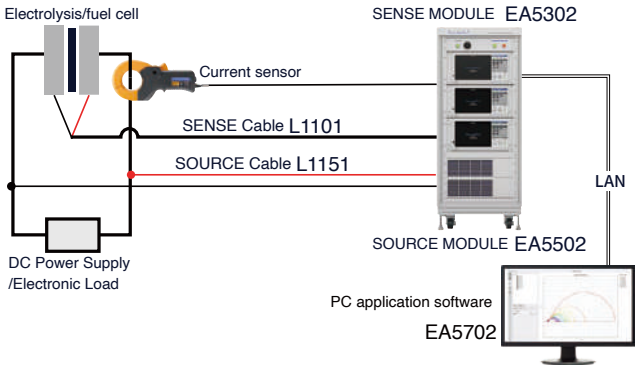


Our current sensor method avoids the temperature drift issues common with shunt methods. High-precision current measurement ensures stable results with minimal variation, even at low frequencies below 1 Hz.

Easy connection to existing electrolysis cell and fuel cell systems



Designed specifically for EIS, ALDAS offers a simple setup that connects in parallel to existing electrolysis cell and fuel cell systems—no dedicated power supply or load required. Furthermore, our current sensors ensure easy installation without any system modifications.



Example 1 (for a single cell): EA5202-02 × 1, EA5502 × 1, EA5702 × 1, L1101 × 1, L1151 × 1, current sensor (number depends on the measurement target). (Other components such as racks are required.)

Example 2 (for 15 cells + entire stack): EA5302-08 × 2, EA5502 × 1, EA5702 × 1, L1101 × 16, L1151 × 1, current sensor (number depends on the measurement target). (Other components such as racks are required.)

Measurement target	Electrolysis cell, fuel cell, cell stack
Measurement parameters	Impedance (R, X, θ, Z), voltage (V), current (I)
Measurement modes	Logging Mode, EIS Mode
Display modes	Nyquist plot, Bode plot, logging plot
Measurement voltage	1.5 V to 1000 V
Measurement current	400 mA to 2000 A (CT6877A) Maximum 10 kA (depending on the combination of sensors)
Max. measured signal level	80 Ap-p (at 50 V) (Derating applies for voltages above 50 V)
Measurement frequency range	10 mHz to 100 kHz
Number of input channels	1 to 48 channels

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All information correct as of Apr. 8, 2026. Contents are subject to change without notice.

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