

# High-Power EIS Analysis

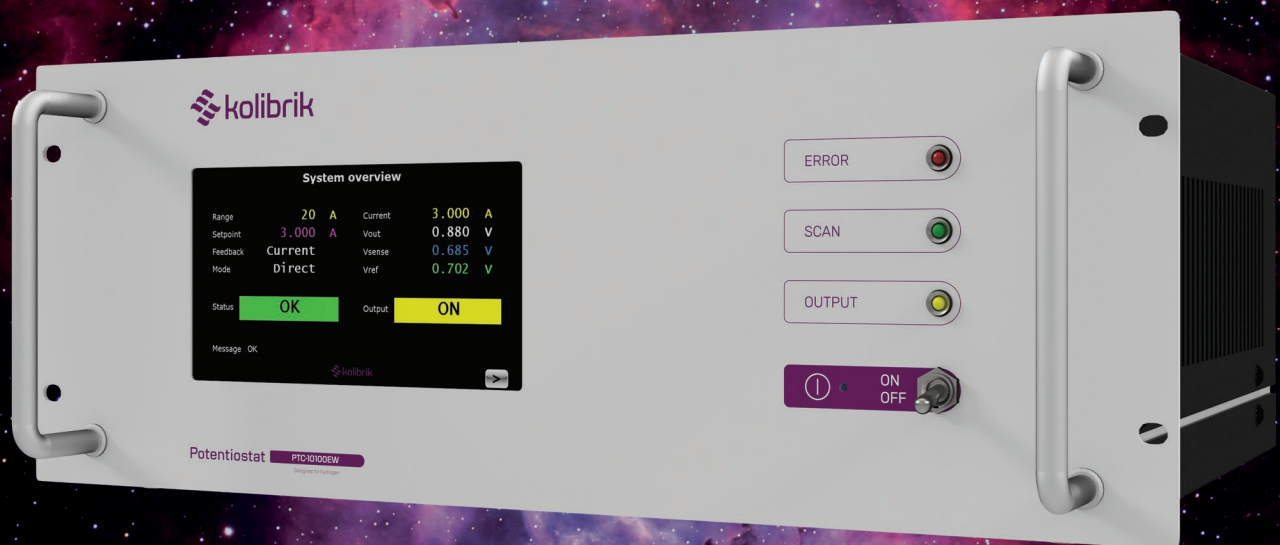
## Potentiostat

Product Family

Up to 100 A • Up to  $\pm 10$  V

EIS 1 mHz — 100 kHz

Power Dissipation Up to 1000 W



4-Quadrant Measurement



Fuel Cells



High-Current Capability



Electrolyzers



Precision & Reliability



Batteries

# Potentiostat/Galvanostat



The Kolibrík Potentiostat Product Family is a high-power lineup of potentiostat/galvanostat/FRA systems, purpose-built for demanding applications like fuel cells, electrolyzers, and high-capacity batteries.

## Key Features & Functions

### Optimized for High-Power Lab

**From  $\pm 20$  A up to  $\pm 100$  A**, The Kolibrík Potentiostat Product Family gives you full control over your current and voltage ranges. Choose exactly what your application needs – compliance voltage options include  **$\pm 5$  V**,  **$-5/+10$  V**, and  **$\pm 10$  V**. All models support true **4-quadrant operation**.

Equipped with two external voltage sensing probes (1 G $\Omega$  input impedance, low-pF input capacitance) for 2-, 3-, and 4-electrode configurations. Each model includes four current ranges for accurate, flexible measurements.

### Uncompromising High-Current EIS Performance

**EIS is where the Kolibrík Potentiostat Product Family truly shines.**

With frequency support from **1 mHz to 100 kHz** (and up to 1 MHz in limited mode), plus **up to 50% of the system's full current range** available for EIS below 1 kHz, you get **real, usable data under real operating conditions**.

Thanks to a **14-bit ADC** running at **up to 20 Msps**, impedance data comes through with the accuracy and resolution your analysis demands – even on large, high-current cells.

### Real Support for Every Step

**We're not just shipping boxes.**

Kolibrík's technical team is with you through setup, commissioning, integration, and day-to-day operation – making sure you get the most out of your instrument, every step of the way.

### Automation-Friendly, Integration-Ready

From standard methods to fully automated test systems, the Potentiostat Product Family provides the flexibility and control you need:

- Integrated TCP Server
- NI LabVIEW drivers
- Python library with examples
- Seamless external control & scripting
- Designed for integration into custom experiments and automated test setups

No limits. Just smart science, your way.

### Versatility Across Electrochemical Techniques

Potentiostat Product Family handles a wide range of electrochemical techniques, including:

- Electrochemical Impedance Spectroscopy
- Cyclic Amperometry
- Cyclic Voltammetry
- Linear Sweep Voltammetry
- Linear Sweep Amperometry
- Constant Voltage
- Constant Current
- Chronopotentiometry
- Chronoamperometry
- Various pulsing methods
- Open Circuit Voltage
- Battery Charge and Discharge

The instrument enables programmable sequencing of all available methods and Python scripting.



# Technical Parameters



	PTC-0520E	PTC-1020E	PTC-0550E	PTC-1050EW	PTC-05100EW	PTC-10100EW
<b>Power supply</b>	110 ... 240 V AC / 50 ... 60 Hz					
<b>Dimensions</b>	19" rack cabinet, 4U height					
<b>Cooling</b>	Air	Air	Air	Water	Water	Water
<b>Protection rating</b>	IP20					
<b>Electrometer Input voltage range</b>	-10 V ... +10 V					
<b>Compliance / Output voltage</b>	-5 V ... +5 V	-5 V ... +10 V	-5 V ... +5 V	-10 V ... +10 V	-5 V ... +5 V	-2 V ... +10 V
<b>Compliance / Output current</b>	-20 A ... +20 A	-20 A ... +20 A	-50 A ... +50 A	-50 A ... +50 A	-100 A ... +100 A	-100 A ... +100 A
<b>Max. internal power dissipation</b>	200 W	300 W	350 W *)	1000 W	1000 W	1000 W
<b>Current ranges</b>	20 mA, 200 mA, 2 A, 20 A	20 mA, 200 mA, 2 A, 20 A	500 mA, 5 A, 20 A, 50 A	500 mA, 5 A, 20 A, 50 A	500 mA, 5 A, 20 A, 100 A	500 mA, 5 A, 20 A, 100 A
<b>Sampling</b>	24-bit ADCs, 1 ksps internal, 50 sps filtered sampling 14-bit ADCs, up to 20 Msps for EIS measurements					
<b>Measurement resolution</b>	0.001% of selected range for $\leq 1$ ksps sampling					
<b>Accuracy</b>	Voltage: $\leq 0.1\%$ of range + 0.1% of reading Current: $\leq 0.1\%$ of range + 0.5% of reading					
<b>Acquisition methods</b>	Constant V, I, Open circuit, Manual control, Linear Sweeps, Cyclic Voltammetry, Cyclic Amperometry, Electrochemical Impedance Spectroscopy (EIS), Chronoamperometry, Chronopotentiometry, Double Step Chronoamperometry, Double Step Chronopotentiometry, Current Interrupt, Square Pulse Potentiometry, Square Pulse Amperometry, Battery Charge and Discharge, Custom experiment sequences, Python scripting					
<b>EIS frequency</b>	1 mHz ... 100 kHz, limited use up to 1 MHz					
<b>EIS amplitude</b>	1 ... 1000 mV, up to 10 A for $< 1$ kHz	1 ... 1000 mV, up to 10 A for $< 1$ kHz	1 ... 1000 mV, up to 25 A for $< 1$ kHz	1 ... 1000 mV, up to 25 A for $< 1$ kHz	1 ... 1000 mV, up to 50 A for $< 1$ kHz	1 ... 1000 mV, up to 50 A for $< 1$ kHz
<b>PC connection</b>	USB 2.0					
<b>Software</b>	Software for MS Windows, TCP Server, NI LabVIEW drivers, Python library and examples					

\*) 350 W continuous (air cooling, room temperature 25°C)  
limitation in sink mode: 50 A for  $\leq 2$  V, 35 A for 2 ... 5 V  
500 W peak (for 10 s)

# Flexible Test Systems



## Hardware That Adapts

Each unit comes in a **4U 19" rack-mountable enclosure**, with cooling options based on power level:

- **Air cooling** models with power up to 350 W
- **Water cooling** variants (PTC-1050EW and PTC-05100EW) for maximum power use

That means easier integration into both lab and industrial setups, with thermal management that matches your conditions.

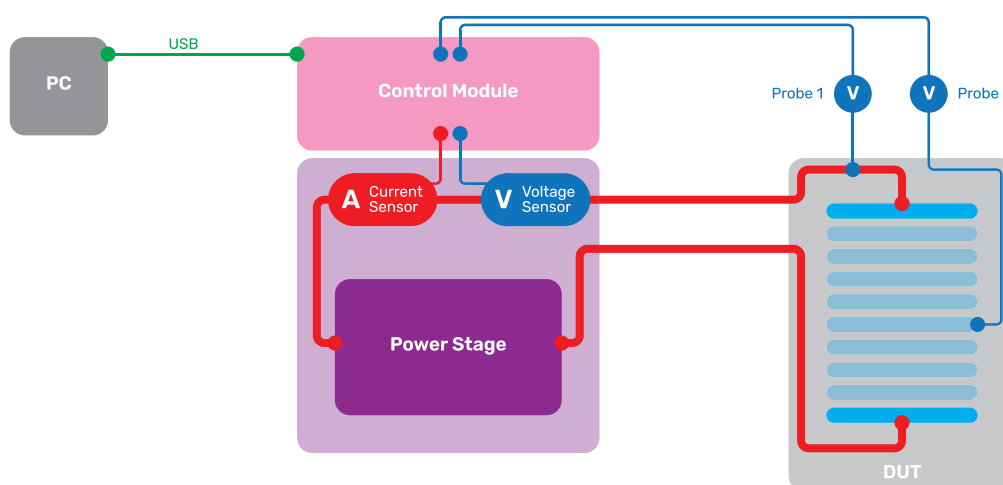
## Application-Ready, Research-Tested

Designed for more than just batteries, Potentiostat Product Family excels in high-current applications like:

- **Hydrogen fuel cells**
- **Water and CO<sub>2</sub> electrolyzers**
- **Solid-oxide cells**
- **Redox-flow systems**

It's also a solid fit for **applied research, manufacturing QA**, and **high-throughput testing** – especially where advanced EIS is a must.

## Block Schema



Potentiostat Product Family 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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