

THE COMPACT INSTRUMENT FOR VERSATILE CONTROL AND MEASUREMENT TASKS

## Small Potentiostat MP04



The MP04 is a compact small potentiostat for electrochemical as well as physico-chemical laboratory applications in development, experimental work and routine operation.

It is suited for precise potentiostatic and galvanostatic measurement tasks in space-saving test setups.

Depending on the version, the MP04 E operates with currents up to 200 mA and the MP04 T with currents up to 400 mA.

The robust aluminium housing supports effective cooling and is designed for continuous laboratory use.



### Operating Principle

The MP04 features an internal control voltage source, a high impedance input for the reference electrode and six current ranges. It operates in OCP, potentiostat and galvanostat modes.

In OCP mode, direct potential measurement is possible. In controlled operation, the instrument controls the cell precisely via the preset setpoint and can therefore be integrated flexibly into different laboratory setups.

### Your benefits at at glance

- **Two power variants:** MP04 E up to 200 mA, MP04 T up to 400 mA.
- **Three central operation modes:** OCP, potentiostatic control and galvanostatic control.
- **Stand alone operation:** Internal control voltage source ( $\pm 2000$  mV) for direct laboratory use.
- **Flexible adjustment:** Six current ranges for different measurement tasks.
- **Compact and robust:** Aluminium housing with good heat dissipation.
- **Versatile in use:** Can also be used as potential meter, precision voltage source, current sink or power operational amplifier.

DESIGNED FOR COMPACT, PRECISE AND VERSATILE LABORATORY APPLICATIONS

# Specification MP04

## Potentiostat

Control input resistance	200 k $\Omega$
Open loop gain	$> 2 \times 10^6$ (dc)
Unity gain band width	200 kHz typ.
Small signal rise time	$< 10 \mu\text{s}$ (closed loop, ohmic load)
Slew Rate	10 V/ $\mu\text{s}$
Full power bandwidth	20 kHz
Noise referred to input	50 $\mu\text{V}$ rms
Drift referred to control input	50 $\mu\text{V}/10\text{h}$ , 100 $\mu\text{V}/100\text{h}$ , 10 $\mu\text{V}/^\circ\text{C}$
Current to voltage conversion	$\pm 2\text{ V}$ bei Bereichsvollaussteuerung
Accuracy of current to voltage conversion	0.3 %
Internal phase compensation	90° from 0.2 Hz to 200 kHz
Overload indication	LED at the output limit
Power limits MP04 E	max. 5 W at $\pm 30\text{ V}$ and $\pm 250\text{ mA}$
Power limits MP04 T	max. 10 W at $\pm 30\text{ V}$ and $\pm 450\text{ mA}$
Current ranges M04 E or MP04 T	10 /100 $\mu\text{A}$ , 1/10/100/200 mA or 400 mA

## Dimensions and power supply

Dimensions	162 x 160 x 105 mm
Power supply	115 / 230 V AC, 18 W for MP04 E, 24 W for MP04 T

## Potential buffer

Input impedance	$> 10^{12} \Omega$ , 3 pF parallel
Potential range	$\pm 10\text{ V}$
Input bias current	$3 \times 10^{-11}\text{ A}$ at 25 $^\circ\text{C}$
Unity gain band width	3 Mhz
Small signal rise time	$< 10^{-6}\text{ s}$
Slew Rate	10 V/ $\mu\text{s}$
Potential output	500 $\Omega$
Noise (0-250 kHz)	$< 30 \mu\text{V}$ rms
Drift	50 $\mu\text{V}/10\text{h}$ , 100 $\mu\text{V}/100\text{h}$ , 5 $\mu\text{V}/^\circ\text{C}$

## Internal control voltage source

Range	$\pm 2000\text{ mV}$
Tolerance	$\pm 0,2\%$

## Typische Anwendungen

- Corrosion investigations and long-term polarization at constant potential
- Measurement of small galvanic short-circuit currents
- Potential measurement and OCP investigations in electrochemical cells
- Membrane and electrode research, also in bi-potentiostat configuration with two instruments
- Precise control tasks in physico-chemical laboratory setups

**We will be pleased to advise you on integrating the MP04 into your test setup.  
Contact us directly or request an individual quotation.**

