

Microcell HC Basic Setup

Electrochemistry served hot and cold

The Microcell HC basic setup has been designed to **adjust the sample temperature** when working with test cells from rhd instruments. Based on **Peltier element technique**, the accessible sample temperature range is **-40 °C to +100 °C**. The temperature is measured with a **high accuracy of 0.1 °C** by means of Pt100 temperature sensors which are embedded in each test cell socket. Due to optimized control parameters and a very fast response to new temperature set points, temperature overshoots can be avoided.



Suggested Accessories

Typical Applications:

- Determination of the **temperature-dependent electrolyte conductivity**.
- Investigation of the temperature-dependent **structure and dynamics of buried interfaces**.
- Investigation of the **temperature-dependent behavior of electrochemical system** in general.



840212

TSC 1600 Closed



840214

TSC Battery



840215

TSC Surface



840216

TSC Spectro



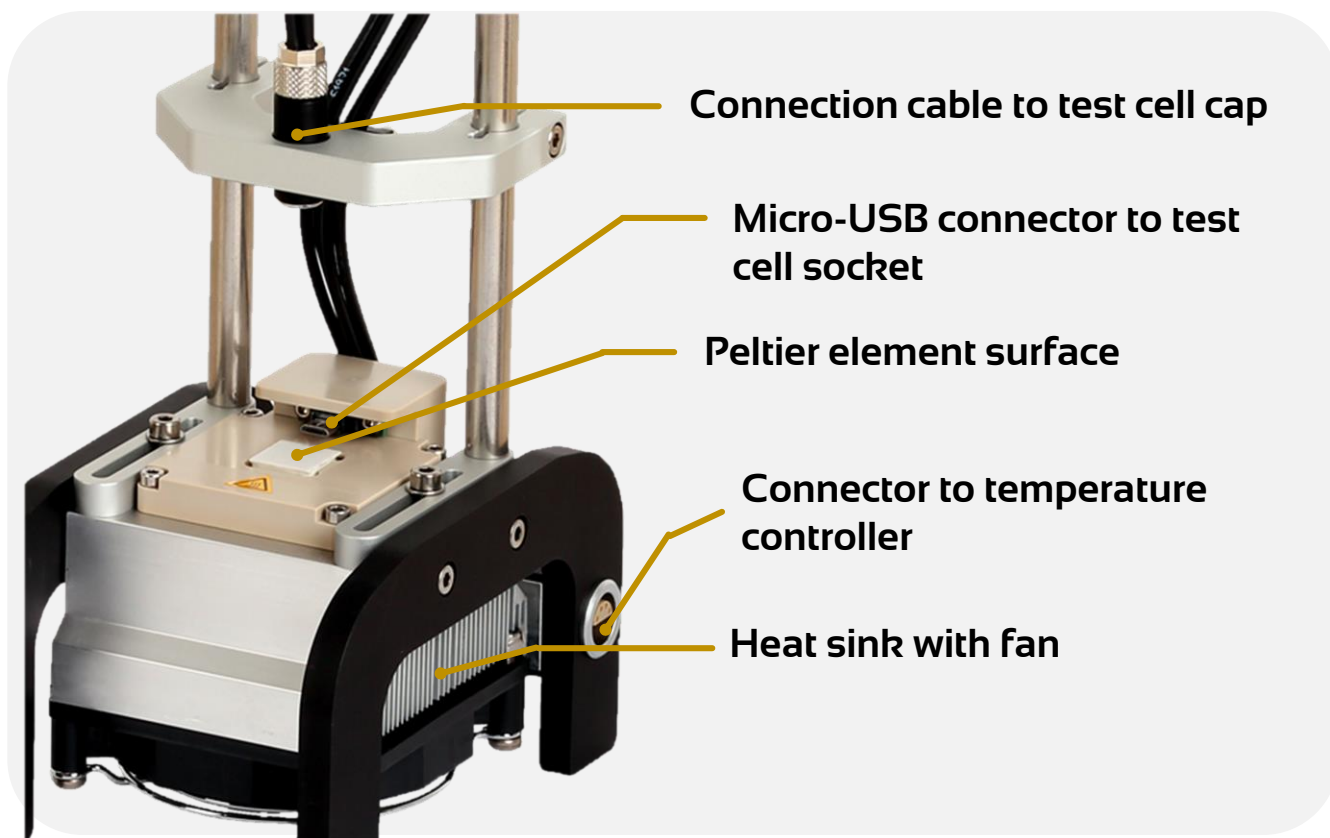
www.rhd-instruments.de



info@rhd-instruments.de

rhd  instruments
flexible cell solutions

Microcell HC Basic Setup



Connection cable to test cell cap

Micro-USB connector to test cell socket

Peltier element surface

Connector to temperature controller

Heat sink with fan

Technical Specifications

Compatible test cells:	<ul style="list-style-type: none"> • TSC 70/1600 Closed • TSC Sw Closed • TSC Battery • TSC Surface • TSC Spectro
Adjustable temperature range:	<p>-40 °C* ↔ +100 °C</p> <p>*accessible in combination with rhd Cooling Box</p>
Communication protocol (temperature controller)	<p>RS232 or analog I/O*</p> <p>*requires MultiSourceBox</p>
Mains voltage (temperature controller)	<p>$U_{AC(rms)} = 100 \text{ to } 240 \text{ V}$</p>
Optional accessories:	<ul style="list-style-type: none"> • rhd Cooling Box (for lower temperatures) • MultiSourceBox

References

- [1] J. Atik et al., 'Acyclic Acetals in Propylene Carbonate-Based Electrolytes for Advanced and Safer Graphite-Based Lithium Ion Batteries', *J. Electrochem. Soc.* (2020) 167, 4, 040509.
<https://doi.org/10.1149/1945-7111/ab72dc>
- [2] A. Hatz et al., 'Faster Water-Assisted Lithium Ion Conduction in Restacked Lithium Tin Sulfide Nanosheets', *Chem. Mater.* (2021) 33, 18, 7337.
<https://doi.org/10.1021/acs.chemmater.1c01755>
- [3] M. Ochs et al., 'Influence of Wettability on the Impedance of Ion Transport Through Mesoporous Silica Films', *Advanced Materials Interfaces* (2021) 8, 9, 2002095.
<https://doi.org/10.1002/admi.202002095>
- [4] D.-L. Versace et al., 'Highly Virulent Bactericidal Effects of Curcumin-Based μ -Cages Fabricated by Two-Photon Polymerization', *ACS Appl. Mater. Interfaces* (2020), 12, 5050.
<https://dx.doi.org/10.1021/acsami.9b18693>



www.rhd-instruments.de



info@rhd-instruments.de

rhd  instruments
flexible cell solutions