

TCU-100 microfluidic temperature control



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Description

The Meros TCU-100 is an advanced temperature controller for microfluidic chips and other devices. It can provide extremely accurate control of a fixed temperature from 1°C to 100°C, rapid temperature ramps or thermocycling. The TCU-100 is the first module to be launched from the Meros product range. Meros is a plug-and-play range of microfluidic products designed for ultimate ease of use at an affordable price. The Meros product range is ideal for teaching, research or industrial applications.

Benefits

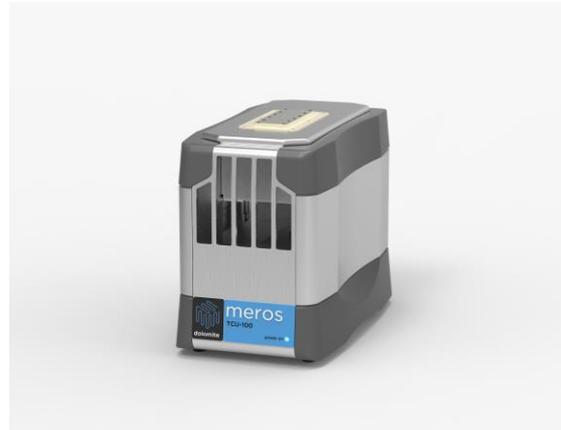
- **Accurate and stable:** Stability $\pm 0.1^{\circ}\text{C}$
- **Fast ramp rates:** Temperature ramps up to 2°C/s
- **Compact:** Only 11cm (4 $\frac{1}{4}$ " wide)
- **Flexible:** Accepts 100s of chip designs and other devices
- **Easy to use:** Plug and play
- **Versatile:** Can be integrated with a larger microfluidic system, such as pumps, sensors, valves etc.
- **Inexpensive:** Ideal for academic or industrial applications
- **Robust:** Chemically resistant and reliable

Product Specifications

Specification	Value
Maximum operating temperature	100°C
Minimum operating temperature	1°C
Product size (mm)	109W x 189D x 149H
Heating plate footprint (mm)	60 x 22.5
Heating plate surround material	PEEK
Compatible chip and microscope slide sizes	Any sizes up to 25 x 75 mm

Meros TCU-100 – Part No. 3200428

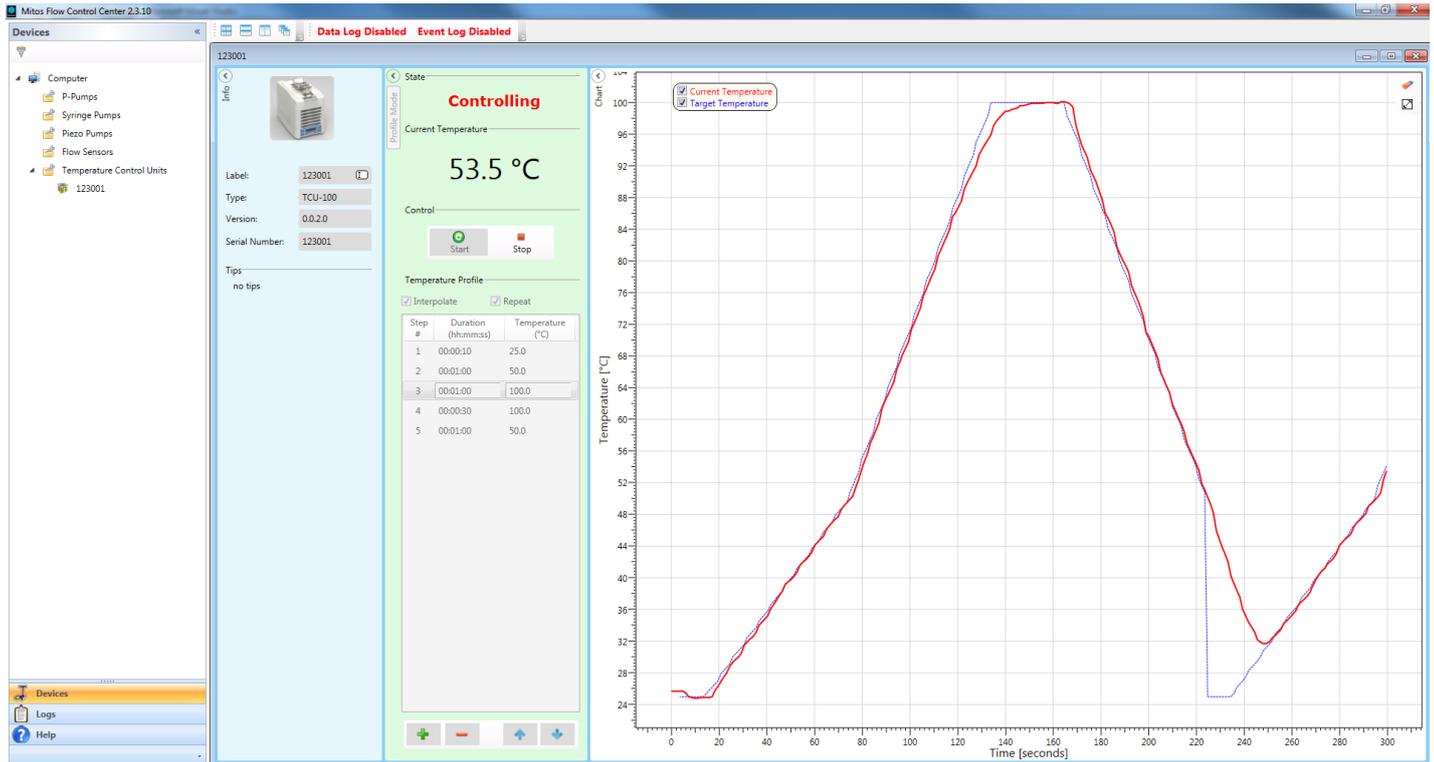
The Meros TCU-100 has a hot/cold plate area of 60mm x 22.5mm and comes with 4 optional, flexible sample clips. Holes in the plate allow dowel pins to be mounted for chip alignment. This combination enables a wide range of chips (including non-Dolomite chips), microscope slides or other devices to be quickly and securely held in place ensuring excellent thermal contact. The TCU-100 is compatible with chip and microscope sizes up to 25 x 75mm. Standard chip sizes such as 15 x 45mm T-junction chips are ideal for use with the Meros TCU-100. Two Droplet Junction Chips (15 x 22.5mm) can be fitted across the heating plate with associated connectors for parallel experiments, when the TCU-100 is fitted with the H Interface Temperature Control Kit (Part No. 3200429).



Meros TCU-100 (Part No. 3200428)

Specialist electronics and temperature measurement techniques provide cutting edge temperature control including **cooling, heating and thermocycling**. Temperature accuracy of 0.5°C, stability and target temperature resolution of $\pm 0.1^\circ\text{C}$ and ramp rates up to 2°C/s make it ideal for microfluidic temperature control. The PEEK heating plate surround ensures resistance to chemical spills.

The Meros TCU-100 is PC-controlled via a USB or RS232 port. Control, data logging and graphing is possible from Dolomite's user friendly Flow Control Centre software or 3rd party software such as Labview. The Flow Control Centre software enables custom temperature profiles to be created for easy management of experiments.



A screenshot of the Flow Control Centre software showing the interpolate function, which allows the user to perform controlled temperature ramps

USB to RS232 Adaptor Cable (Part No. 3200197)

For PCs that do not have an RS232 serial interface, Dolomite offers a RS232 to USB Adaptor Module cable which allows users to connect their Meros TCU-100 to a PC.



USB to RS232 Adaptor Cable (Part No. 3200197)

Additional accessories/replacement parts:

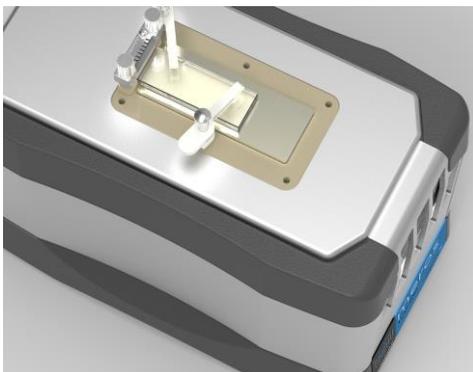
H Interface Temperature Control Unit (Part No. 3200429)



H Interface Temperature Control Unit (Part No. 3200429)

The H Interface Temperature Control Kit enables microfluidic experiments utilising the precise thermal control of the TCU-100 with a range of droplet junction, droplet merging and Y-junction chips. Compatible with the popular and economical 15 x 22.5 x 4 mm chip format, 2x Linear Connector 4-way (Part No.3000024) and H Interface (Part No. 3000155), this kit features a heat plate adaptor and insulative cover for 2 microfluidic set-ups in parallel. Good thermal contact is ensured by mounting the H Interface Temperature Control Kit using the Sample Clips provided with the TCU-100 (Part No. 3200430).

TCU-100 Sample Clips (pack of 4) (Part No. 3200430)



**TCU-100 Sample Clips (pack of 4)
(Part No. 3200430)**

The sample clips enable the chip or microscope slide to be securely held in place with excellent thermal contact to the heating plate. 6 sample clip screw-in ports provide the flexibility to accommodate a wide range of sample sizes and shapes.

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