

Harvard/Medical Systems* TC-202A Temperature Controller



The TC-202A Bipolar Temperature Controller, the new and improved version of the TC-102 Monopolar Temperature Controller, operates with micro-incubators to provide both heating and cooling functions for life science research purposes.

While the unit has multiple potential uses, it has been designed as an ideal companion unit for Harvard Apparatus/Medical Systems Peltier-based micro-incubators. In

its monopolar mode, however, the TC-202A efficiently controls microincubators that use resistive heaters such as the Leiden Micro-Incubator Systems and the BSC-BU Brain/Tissue Slice Chamber units.

Because the TC-202A is bipolar, it is ideally suited for use with Peltier devices such as those built into our models PDMI-2 Open Perfusion Micro-Incubator, PSMI Patch Slice Micro-Incubator and CSMI Chambered Slide Micro-Incubator.

Flexible

The TC-202A allows the researcher to control the command temperature from alternative locations. In the case of the PDMI-2, PSMI and CSMI micro-incubators, temperature is controlled either from a thermistor placed in the bath, or from a second thermistor permanently positioned on the plate containing the regulated surface of the Peltier devices.

- Low Noise
- Bipolar or monopolar
- 0° to 50°C
- Digital display
- Replaces TC-102
- Excellent stability
- Works with all Harvard micro-incubation and tissue slice chambers

Accurate

Accurate temperature control ($\pm 0.2^\circ\text{C}$) is achieved by sensing temperature with a miniature thermistor, digitizing the thermistor signals, and then proportionally regulating a low noise DC current output. Current output is also regulated to match the thermal time constants of small systems, such as micro-incubators, thus minimizing initial set-up overshoot and oscillations about the set point.

Other Features

- Low electrical noise for sensitive electrophysiology recordings
- Stable long term operation
- Excellent temperature stability at user selectable set points
- Easy to use, digitally set command temperatures
- Versatile Monopolar or Bipolar operation (heat only or heat and cool)
- Temperature profile monitoring capability
- Over-temperature shut down

Specifications

Temperature Setting Range	0° to 50°C
Temperature Regulation	$\pm 0.2^\circ\text{C}$
Temperature Display	0.1°C resolution
Chamber Temperature Sensor	Thermilinear type, 36 K, nominal at 25°C
Voltage Range	0 to ± 5 V
Current Range	0 to ± 6 ADC
Case Size	48.3 x 8.9 x 33.7 cm (19 x 3.5 x 13.25 in), 19 in rack mountable
Weight	5.7 kg (12.5 lb)
Power	150 W, 120/230 VAC, 50/60 Hz, user selectable

Catalog No.	Model	Product
CGS 8701.75	TC-202A	Bipolar Temperature Controller for use with PDMI-2, PSMI, CSMI, LU-CB-1, LU-CPC-CEH, and BSC-BU, Includes Thermistor BSC-T3
CGS 8724.75	BSC-T3	Thermistor (bath) for Use with PDMI-2, PSMI, LU-CB1, and TC-202A (36 KW total)
CGS 8725.75	BSC-T3A	Thermistor (Bath) for Use with LU-CPC-CEH
CGS 8726.75	BSC-T2	Old Style, T2 Thermistor (Bath) for Obsolete TC-102
CGS 8727.75	BSC-T2A	Old Style, Thermistor (bath) for Use with LU-CPC-CEH and TC-102