

Chamber System Heater Controllers

Single Channel TC-324B • Dual Channel TC-344B

WARNER

Featuring:

- Slow Ramped DC Power for Quiet Operation
- Temperature Set with a Single Control
- Manually Controlled DC Output



Dual Channel TC-344B

TC-324B and TC-344B heater controllers have been designed to provide quiet, electric power to a variety of perfusion heating devices including Warner Series 20 heater platforms. Each channel can supply up to 18 watts into a load of 8 Ohms. Maintenance of heat setpoint is controlled automatically in AUTO mode via thermistor feedback. A loop-speed selector allows for selection of three feedback speeds to optimize stability for thermal response characteristics of the device being heated. Heat setpoint maintenance may also be manually controlled in MANUAL mode.



Single Channel TC-324B

Ease of Use

In AUTO mode, the desired temperature is set with a single SET TEMPERATURE control. The connected chamber platform, solution heater or other device is automatically controlled to the set temperature. Accuracy is typically better than $\pm 1^\circ\text{C}$ and under ideal conditions will approach $\pm 0.1^\circ\text{C}$. In MANUAL mode, the controller provides a variable DC output adjustable from zero to +12 volts.

Quiet Operation in Recording Setups

Highly filtered DC supplies and slow-ramped analog switching circuitry deliver power without adding noise to the system.

2 Thermistor Readouts

Each channel reads two thermistors simultaneously: T1 for the control of the system, and a T2 for any point of interest. These temperatures are read on the meter and also available at front panel outputs for recording devices. Unical thermistors are used and can be replaced without the need for recalibration.

TC-324B & TC-344B Specifications

Apply to each channel of the TC-344B

Max. Output Voltage: 12 volts DC
 Max. Output Current: 1.5 amperes
 Max. Output Power: 18 watts (8 Ohm's load)
 Manual Voltage Range: 0 to 12 volts
 Temperature Range: ambient to 50°C
 Recorder Outputs: T1 (control thermistor) 100 mV/ $^\circ\text{C}$
 T2 (monitor thermistor) 100 mV/ $^\circ\text{C}$

Inputs: Rear Panel BNC for T2
 (TA-29 thermistor cable assembly)
 Meter: 3 1/2 digit LED display of:
 Set Temperature, 50°C maximum T1
 (control thermistor) temp.
 T2 (monitor thermistor) temp.
 Heater Voltage, 12 volt max

Power Requirements

100-1301220-240 VAC, 50/60 Hz, 70 VA

Enclosure Dimensions

TC-324B
 Bench top: 8.9 cm H x 20 cm W x 25.4cm D
 Shipping weight 3.6 kg.
 TC-344B
 Rack mount: 8.9 cm H x 43 cm W x 25.4 cm D
 rack mount hardware included.
 Shipping weight 6.8kg.

Ordering information

TC-324B Heater Controller, single channel
 TC-344B Heater Controller, dual channel Accessories
 CC-28 Cable assembly for Series 20 heater platforms
 CC-35 Cable assembly with unterminated outboard