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Have you
seen our...

Ø5.6 mm
and Ø9 mm
TEC Laser
Mounts



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T-Cube™ USB-Based TEC Controller



TTC001

Features

- ± 1 A / 4 W TEC Output
- Highly Compact T-Cube Footprint (60 mm x 60 mm x 47 mm)
- Microcontroller-Based PID Temperature Control
- Compatible with AD590 Sensors
- Five-Digit LED Display
- Temperature and Current Limit Setpoints
- Manual and USB Interfaces

Overview

The TTC001 T-Cube TEC Controller is designed to monitor and precisely control the temperature of small, thermally sensitive components such as laser diodes and CCD arrays. The unit is capable of supplying a maximum current of ± 1 A (4 W Max) to a Peltier effect thermoelectric heater/cooler or a resistive heating cartridge while simultaneously monitoring the signal from a standard thermistor or IC temperature sensor in order to provide closed-loop temperature regulation.

Operation

The TTC001 T-Cube can be controlled via the manual interface on the top of the unit or via a USB connection to a computer running the included apt™ software or ActiveX® command modules. The apt™ software included with the unit provides the same functionality as the manual controls on the unit, while the ActiveX® command modules can be used to create customized advanced control sequences like temperature cycling for reliability testing. Independent of the method used to control the TTC001, various parameters such as the temperature setpoint, current limit, temperature sensor type, and Proportional-Integral-Derivative (PID) parameters can be set.

The TTC001 is compatible with the LM14S2 and TCLDM9 thermoelectrically cooled laser diode mounts (see page 1482 and 1486, respectively). It can also be used with the TEC3-2.5 thermoelectric cooler and TH10K thermistor (see page 440).

Specifications

- **Current Measurement Range:** 100 nA to 10 mA
- **TEC Output:** -1A to 1 A
- **Compliance Voltage:** >4V
- **Output Power (Max):** 4 W
- **TEC Connection:** 15-Pin D-Sub Jack (Female)
- **Thermistor:** 20 k Ω / 200 k Ω
- **Control Input:** 0 - 5 V SMA
- **Power Supply:** 5 VDC
- **Dimensions (W x D x H):** 2.36" x 2.36" x 1.85" (60 mm x 60 mm x 47 mm)

The heating/cooling element and the temperature sensor are connected through a 15-pin D-sub connector located on the side of the T-Cube.

Power Supply Options

The TTC001 may be mounted directly onto an optical table and operated as a stand-alone unit with the included 5 V / 500 mA power supply. Alternatively, the TEC controller can be connected using our T-Cube Controller Hub (TCH002). The TCH002 provides power and USB connectivity for up to six T-Cube devices and includes a power supply that plugs into a standard wall outlet, which powers the hub as well as all of the T-Cubes connected to the hub. For example, the hub is an excellent way to pair the TTC001 TEC controller with a TLD001 (page 1442) laser diode controller.

| ITEM # | \$ | £ | € | RMB | DESCRIPTION |
|--------|-----------|----------|----------|------------|--|
| TTC001 | \$ 699.00 | £ 503.28 | € 608.13 | ¥ 5,571.03 | T-Cube™ TEC Controller |
| TCH002 | \$ 726.90 | £ 523.37 | € 632.40 | ¥ 5,793.39 | T-Cube™ Controller Hub and Power Supply Unit |

OEM 3 W TEC Controller Module

The TCM1000T TEC Controller Module regulates current through a thermoelectric cooler (TEC), maintaining a constant temperature of a device, typically a laser diode.

Features

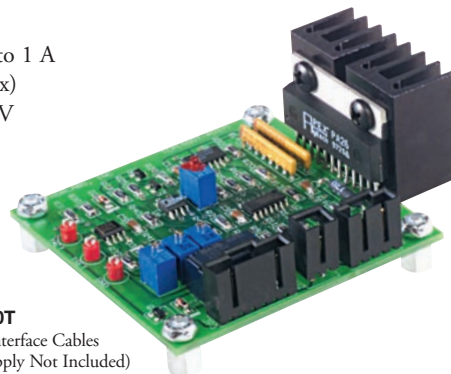
- High-Precision Temperature Control
- TEC Power of 3 W (Max)
- TEC Current of 1 A (Max)
- Compatible Temperature Sensors: 10 k Ω NTC Type Thermistor Sensors
- Temperature Control Range: 5 to 20 k Ω (Max)
- Interface Cables Included
- OEM Plug-In Version Available (Call for Details)

Specifications

- **TEC Current Range:** -1 to 1 A
- **Output Power:** 3 W (Max)
- **Compliance Voltage:** >3 V
- **Stability:** ± 0.1 °C (24 hrs @ Fixed Ambient Temperature)
- **Input Power:** +5 VDC @ 1.25 A Max

| ITEM # | \$ | £ | € | RMB | DESCRIPTION |
|----------|-----------|----------|----------|------------|------------------------|
| TCM1000T | \$ 243.80 | £ 175.54 | € 212.11 | ¥ 1,943.09 | 3 W TEC Control Module |

TCM1000T
Includes Interface Cables
(Power Supply Not Included)



⊕ Mechanical
Drawings Available on the
WEB