

Yexian Technology

Products and Services

Technical Support

Taobao store

Contact Us



Online Con...

Service hours 9:30-1...

Standard temperature control module

Thermo Electric Cooler (TEC), also called Peltier refrigeration sheet, can achieve heating or cooling.

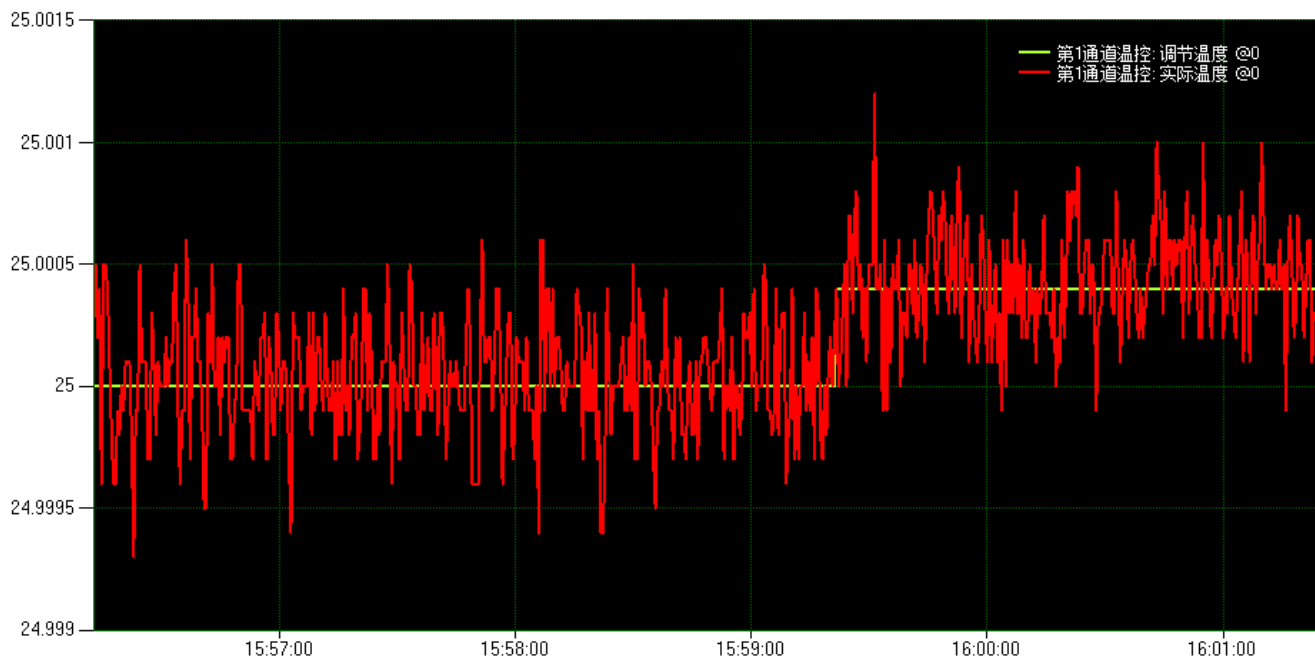
The standard TCM series thermostat can be used to drive the semiconductor refrigeration sheet TEC to achieve bidirectional high-precision temperature control, with excellent constant temperature performance; it can also be set to be used for resistive heating elements (such as ceramic heating sheets/rods, PTC heating sheets).

Suitable for laser temperature control, biomedicine, scientific experiments and other needs.

- Supports NTC thermistor and PT1000 platinum resistor; $<0.002^{\circ}\text{C}$ resolution; sensor open circuit protection.
- The best stability is $\pm 0.002^{\circ}\text{C}$; PID coefficient is adjustable; PID coefficient automatic setting function.
- Three output modes are available: cooling, heating and bidirectional.
- DC voltage source output, small ripple, prolongs the life of semiconductor refrigeration chip, improves refrigeration efficiency and improves stability.
- Full protection functions: over-current, over-voltage, over-temperature and current limiting protection, optional automatic recovery function after fault.
- It can be operated independently or controlled in real time by a handheld user interface module or a computer, recording data and real-time curves.
- Supports one serial port to control multiple temperature control modules.

high performance

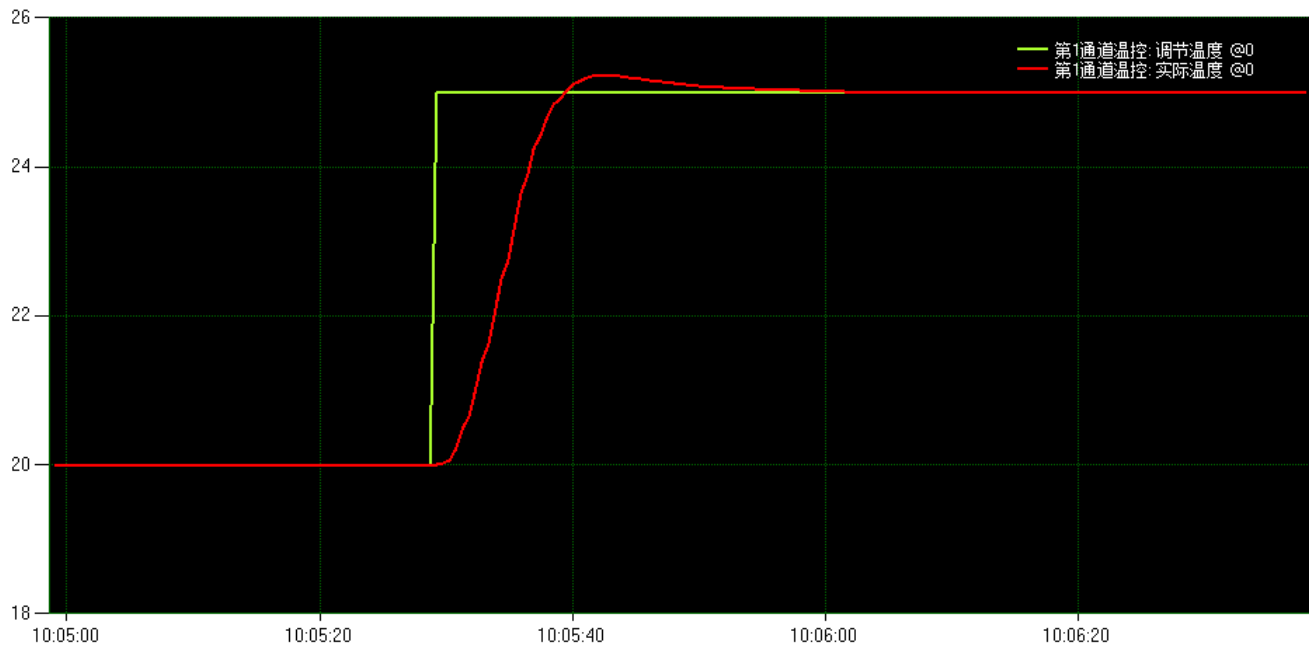
Carefully designed temperature measurement and control system achieves high resolution and high stability.



Automatic tuning

The easy-to-use auto-tuning function simplifies the difficulty of setting PID coefficients;

after the auto-tuning is completed, the optimized PID coefficients will be generated to obtain temperature control performance with fast speed, small overshoot and less oscillation.



Open Platform

Provide complete serial port control commands, users can program by themselves to control the temperature control module through a computer or a single-chip microcomputer;

provide free host computer software, which can realize parameter observation, setting, data recording and curve display and other functions.

Powerful flexibility

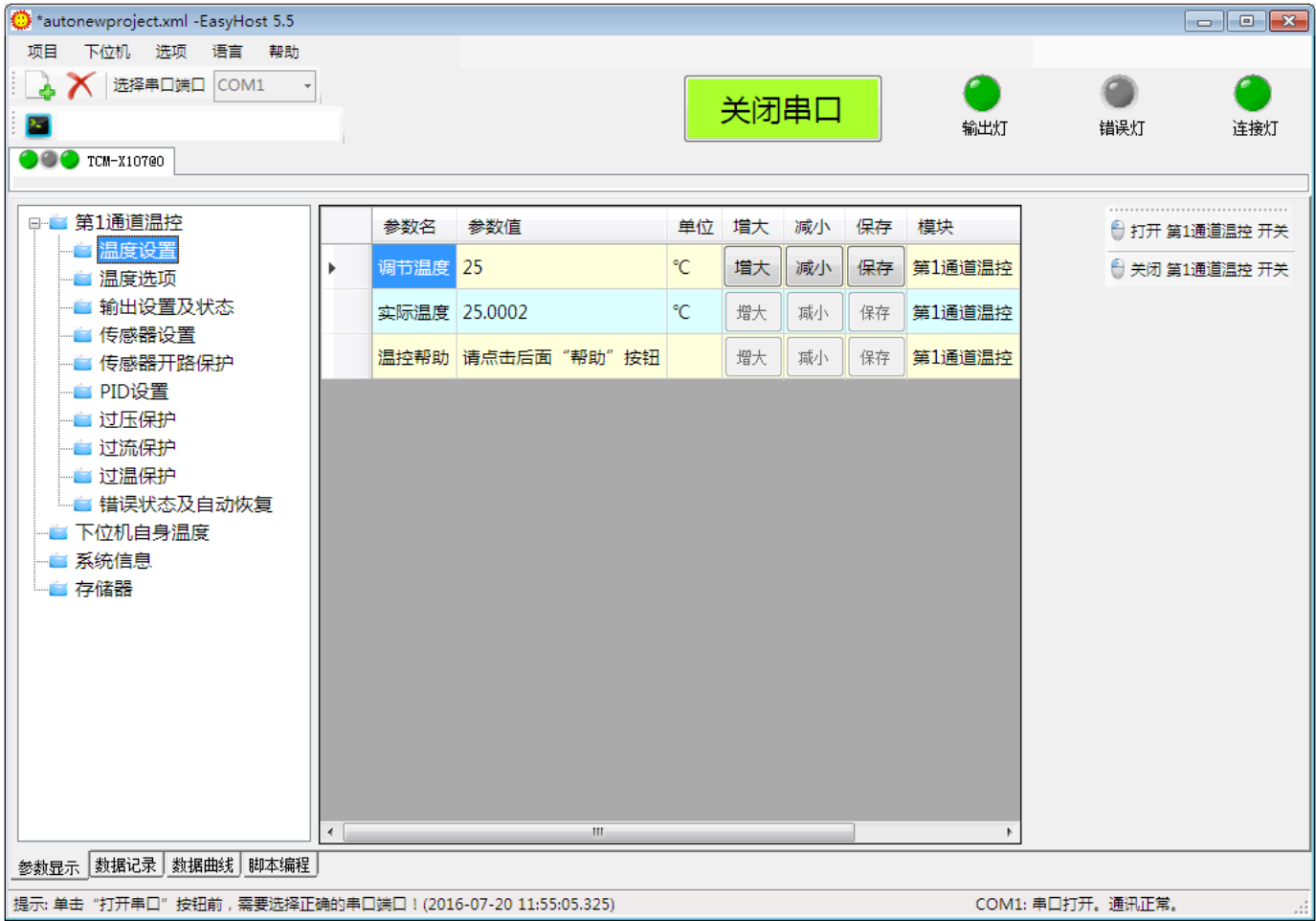
Various parameters can be adjusted, set and saved in the user software, making it convenient for users to use the temperature control module in different temperature control systems.

- Sensor parameters can be flexibly set to support thermistors and PT1000 platinum resistance detectors with different specifications and parameters
- Output parameters such as output mode and maximum output voltage can be flexibly set to meet the needs of different TEC models
- Thresholds for various protections can be flexibly set by software

Control mode/human-machine interface

1. Computer: It can be controlled by computer. The included cable can connect the module to the RS232 serial port of the computer.

If the computer has no serial port, you can use a USB to DB9 male serial port cable. The host computer software is free, with Chinese interface, rich functions and simple operation.



2. UIM: If it is inconvenient to use computer control, you can use the handheld display module UIM (need to be purchased separately).

UIM has an LCD screen and buttons, which can complete parameter observation, setting and saving operations.



3. MCU: You can use the serial port of the MCU (need to be converted to RS232 level) to communicate with the serial port of the module and control the module.
4. Independent operation: In addition to the function of interacting with the user, all the core functions of the module are on the module itself; therefore, after the parameter settings are saved, the module can run independently without being connected to the UIM or computer all the time.

Product Series

	TCM-X107	TCM-M115	TCM-M207
¹ Best stability	0.002℃	0.002℃	0.002℃
Supply voltage	5 ~ 24V	5 ~ 24V	5 ~ 24V
Temperature control quantity	1	1	2
Output polarity	Two-way temperature control	Two-way temperature control	Two-way temperature control
Limit output current	7A	15A	7A
Limit output voltage	90% power supply voltage	80% power supply voltage	85% power supply voltage

size	66×80×25mm	95×80×25mm	95×80×25mm
------	------------	------------	------------

Note 1: Short-term stability indicator under optimized conditions; related to the overall system and PID parameter settings

Technical Documentation

- [Standard temperature control module data sheet](#)
- [Temperature Control Module User Manual](#)
- [TCM Temperature Control Module Selection Guide](#)

Taobao Link

- TCM-X107
- TCM-M115
- TCM-M207

Similar products

- [TCM Temperature Control Module Selection Guide](#)
- [Simplified temperature control module](#)
- [Small version temperature control module](#)

Related Products

- [Universal Display Module UIM](#)
- [Digital tube display module UIME](#)
- [Customizable color display module UIMP](#)
- [Serial port multiplexing module](#)

Software Download

- [General introduction of host computer software](#)
- [Universal control software EasyHost](#)
- [Display module simulation software EasyUI](#)
- [Serial port debugging software EasyCom](#)

Resource Documentation

- [TEC temperature control system introduction](#)
- [TEC Temperature Control FAQ](#)
- [Explanation of the performance indicators of the temperature control module](#)
- [Thermistor Resolution Calculation Excel](#)

- [Power supply selection for temperature control module](#)
 - [RS232 serial port control protocol](#)
-

Application Notes

- [Application Note 1: A Simple Method for Selecting a TEC](#)
- [Application Note 2: NTC Temperature Sensor](#)
- [Application Note 3: PT Platinum Resistance Sensor](#)
- [Application Note 4: Steinhart-Hart Equation for NTC Thermistors](#)
- [Application Note 6: TCM modules connected in parallel to increase power](#)
- [Application Note 7: TCM module networking to achieve one serial port to control multiple modules](#)
- [Application Note 8: Fully user-defined PID algorithm](#)

[Back to top](#)

Chengdu Yexian Technology Co., Ltd.

Sichuan ICP No. 15033192