

USER MANUAL

PELTIER TEMPERATURE CONTROL SYSTEM



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Chapter 1 Installation of instrument

Before installation, please read this manual carefully.

1.1 Unpacking & inspection

After unpacking, please check if all accessories mentioned in the packing list are in the package, and if there is any damage. If any questions, please contact the manufacturer, and well keep the damaged parts.

1.2 Installation condition

1.2.1 Avoid places with dust and corrosive gas

1.2.2 Avoid to install in the place with strong or continuous vibration

1.2.3 Keep instrument far away from electrical devices that can emit magnetic field electric field or high-frequency electromagnetic waves

1.2.4 Working conditions

Temperature : 5°C ~ 35°C

Relative humidity : ≤85%

1.2.5 Power supply

100~240V AC (50Hz/60Hz)

1.2.6 Power

85W

1.2.7 Dimension

334 mm×248 mm×197 mm

1.2.8 Net weight

7.2 Kg

1.3 Instrument structure



Display

Switch

Temperature
Controller

Temperature control
Cell holder

Liquid Outlet

Liquid Inlet



Junction
Box

Cable

Add Liquid

Power Supply

1.4 Introduction of display panel



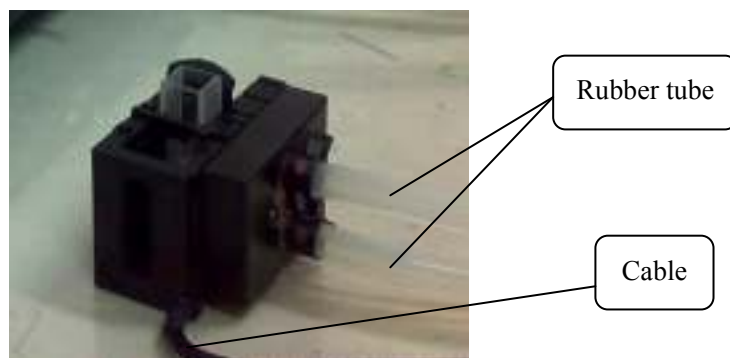
- (1) PV (present value) window
- (2) SV (set value) window
- (3) Display switch (enter parameter settings)
- (4) Position change key of number
- (5) Down key
- (6) Up key

Introduction: after switch on, tested value will be displayed in PV window, and in SV window, it shows the set value. If input signal is higher than the set range, beeper will inform you and at same time "orAL" will be displayer. Beside, instrument will shut off output control automatically.

1.5 Installation

1.5.1 Install the constant temperature cell holder into the sample compartment.

Lead rubber tube and cable out of spectrophotometer.



1.5.2 Connection between cable and main unit is shown as the following photos:

connect the wirings according to their color.



Step 1



Step 2



Step 3

1.5.3 Connect rubber tube



1.5.4 Add water-cooled liquid

- a. Unscrew the screws of liquid adding house, take off cover, and discharge the screw on reciprocating pump.

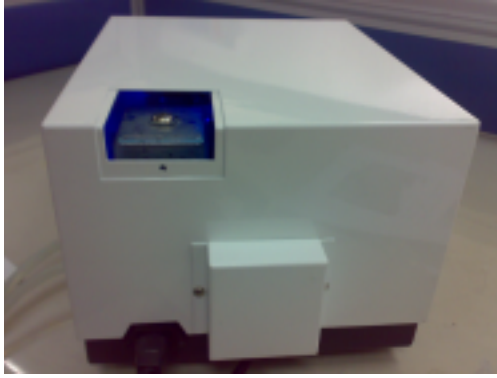


Reciprocating pump

b. Switch on instrument, fill water-cooling liquid inside the reciprocating pump through funnel, wait until there is no bubble, then fill about $\frac{4}{5}$ volume.



c. Fix the sealing screw on the reciprocating pump, cover the pump house, fix screws.



Chapter 2 Specification and Functions

2.1 Specification

Temperature range	10 °C ~ 80 °C (room temperature)
Temperature accuracy	0.1 °C
Sample position	1
Cell available	0.5cm, 1cm, 2cm, 3cm, 4cm

2.2 Notice about operation

2.2.1 Power supply





Connect all cables according to the introduction, and then switch on. In SV window, the set value will be displayed; instrument will enter test & PID control status automatically. If “orAL” flash in SV window, that indicates input is incorrect (type of input signal incorrect, input is out of range, sensor is breaking current, etc.)

2.2.2 Operation of instrument panel

a. Set heating mode

When set temperature is higher than room temperature, turn the switch (temperature controller) upward; when set temperature is lower than room temperature, turn the switch (temperature controller) downward.

b. Set temperature

Under test status, press , in SV window at the ending digit of set temperature, a decimal point comes out, press  or  to increase /decrease the value. By pressing  can change digit. If no operation is made in 10 seconds, temperature setting status will be shut off automatically.

Attention:

a. The temperature that is displayed is the temperature of sample position, the temperature in the cell may be a little different from the display value (because of the loss of heat conduction).

b. The set temperature shall be higher than 5°C than the room temperature.

c. When instrument is used for cooling, pay attention to the humidity to avoid condensate on the surface of cells.

d. When the display shows it has reached the set temperature, insert sample cell, then wait about 10 minutes before test to make sure the sample has dot the set temperature.

Chapter 3 Maintenance of instrument

3.1 Usage notice

3.1.1 If power supply is not stable, a regulated power supply is required to insure the well performance.

3.1.2 Do not disassembly any part of instrument.

3.1.3 Never clean instrument with organic solvents such as: alcohol, gasoline or ether.

3.1.4 If instrument is located in a area with high humidity and high temperature, pay attention to keep the instrument dry. Especially for those users who do not use instrument very often, the instrument shall be switched on to keep dry.

3.1.5 To upgrade the performance of instrument, manufacturer may improve the instrument somewhere; as a result, the instrument you get may be a little different from the photos in the manual.

3.2 Trouble shooting

Failure	Reason	Treatment
Failure on power on	Fuse burnt	Change fuse
Temperature doesn't change	Failure of wirings, refrigerant chip or temperature controller	Check wirings; change refrigerant device; check if position of temperature controller is correct
Bad cooling effect	Water-cooling liquid is not enough or bubbles in water-cooling liquid	Add more water-cooling liquid; refill water-cooling liquid

3.3 Acceptance check of instrument

3.3.1 Set instrument temperature to 15°C, the temperature shall get the set value within 15 minutes (according to 1.6).

3.3.2 Set instrument temperature to 80°C, the temperature shall get the set value within 15 minutes (according to 1.6).