INKBIRD ITC-306T Plug and Play Temperature Controller User Guide

Contents

INKBIRD

INKBIRD ITC-306T Plug and Play Temperature Controller

Specifications:

- Model: ITC-306T
- Power Supply: 100-240V AC, 50/60Hz
- Maximum Load: 10A, 1000W
- Temperature Control Range: -50°C ~ 99°C / -58°F ~ 210°F
- Temperature Resolution: 0.1°C / 0.1°F
- Temperature Accuracy: ±1°C / ±1.8°F
- Dimensions: 140mm x 68mm x 33mm
- Weight: 190g

Product Usage Instructions

Overview:
The ITC-306T is a versatile temperature controller designed for precise temperature control in various applications such as brewing, fermentation, and heating systems.

Specification:
Detailed specifications of the ITC-306T are listed above.

Keys Instruction:
The device features intuitive keys for easy operation. Refer to the manual for specific key functions.

Key Operation Instruction:
Learn how to operate the keys effectively to set and adjust temperature settings.

Menu Instruction:
Understand the menu options available on the device for customized temperature control.

Error Description:
Familiarize yourself with common error messages and their meanings for troubleshooting purposes.

Troubleshooting Guide:
Refer to the troubleshooting guide for solutions to common issues like incorrect probe readings and heating output problems.

FAQ:

- **Q: How can I calibrate the probe if the reading is incorrect?**
  A: Adjust the probe position, dry it if used in liquids, and check for damage. Use the CA function for calibration if needed.
- **Q: What should I do if the heating output does not turn on?**
  A: Verify settings, ensure heater compatibility, and follow the outlined steps for troubleshooting. Contact customer service if issues persist.
- **Q: How do I address the issue of heating output not turning off?**
  A: Confirm settings, check power limits, and follow the provided steps for troubleshooting. Contact customer service if necessary.

Safety Precautions

- Ensure the product using within the specification.
- Do not touch the terminals at least while power is being supplied. Doing so may occasionally result in injury due to electric shock.
- Do not allow pieces of metal, wire clippings, or fine metallic shaving or filings from installation to enter the product. Doing so may occasionally result in electric shock, fire, or malfunction.
- Do not use the product where subject to flammable or explosive gas. Otherwise, injury from explosion may occasionally occur.
- Never disassemble, modify or repair the product or touch any of the internal parts. Electric shock, fire, or malfunction may occasionally occur.
- If the output relays are used over their life expectancy, contact fusing or burning may occasionally occur.
- Always consider the application conditions and use the output relays within their rated load and electrical life expectancy.

Overview

What is ITC-306T?
ITC-306T is a pre-wired heating output temperature controller with time function specifically for breeding and planting. It can be set to two different temperatures with its function of dual time cycle setting during 24 hours according to the day and night, which can more suitable for the physiological needs of animals and plants. ITC-306T can be widely use in over-heat protection and automatic temperature control system of all sorts of electrical equipment for aquarium, pets breeding, hatching, fungus fermenting, and seed germination accelerating, etc. This plug and play product is designed with dual LCD display, and offers the optional display of Centigrade or Fahrenheit, which makes it more humanized temperature control. With large power output 1200W(110V)/2200W (220V), it’s suitable for most applications. And the temperature can be controlled more accurately with its function of temperature calibration and temperature hysteresis.

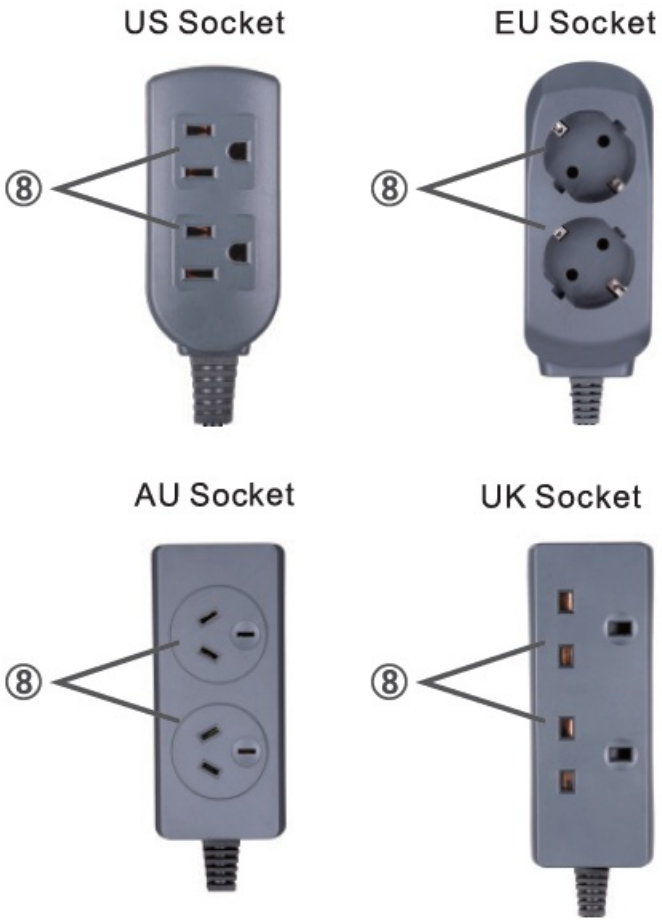
Main features

- Plug and play design, easy to use;
- Dual time cycle setting during 24hours, can be set different temperature from day and night on the basis of the physical needs of animals and plants;
- Support reading with Centigrade or Fahrenheit unit;
- Maximum output load: 1200W(110V) / 2200W(220V);
- Dual display window, be able to display measured temperature and set temperature at the same time; Temperature calibration;
- Over-temperature and sensor fault alarm;
- Build-in ultra-capacitor, after fully filled, it can supply
- Timer chip working for more than 20 days without electricity.

Specification

Temperature Control Range	-50～99 °C /-58～210 ° F
Temperature Accuracy	±1°C (-50 ～ 70°C) / ±1°F (-58～160°F)
Temperature Control Mode	On/Off Control, Heating
Input Power	100 -240VAC, 50Hz/60Hz
Temperature Control Output	Max. 10A, 100V -240V AC
Sensor Type	NTC sensor (Including)
Sensor Length	2m 16.56ft
Relay Contact Capacity	Heating (10A, 100-240VAC)
Input Power Cable Length	1.5m (5ft)
Output Power Cable Length	30cm (1ft)
Dimension (Main Body)	140x68x33mm (5.5×2.7×1.3 inch)
Dimension (Sockets)	US Version: 85x42x24mm EU Version: 135x54x40mm UK Version: 140x51x27mm
Ambient Temperature	-30～75 °C / -22～ 167°F
Storage	Temperature -20～60 °C / -4～ 140 °F Humidity 20～85% (No Condensate)
Warranty	1 Year

Keys Instruction



1. PV: Process Value
    - Under working mode, display current temperature;
    - Under setting mode, display menu code.

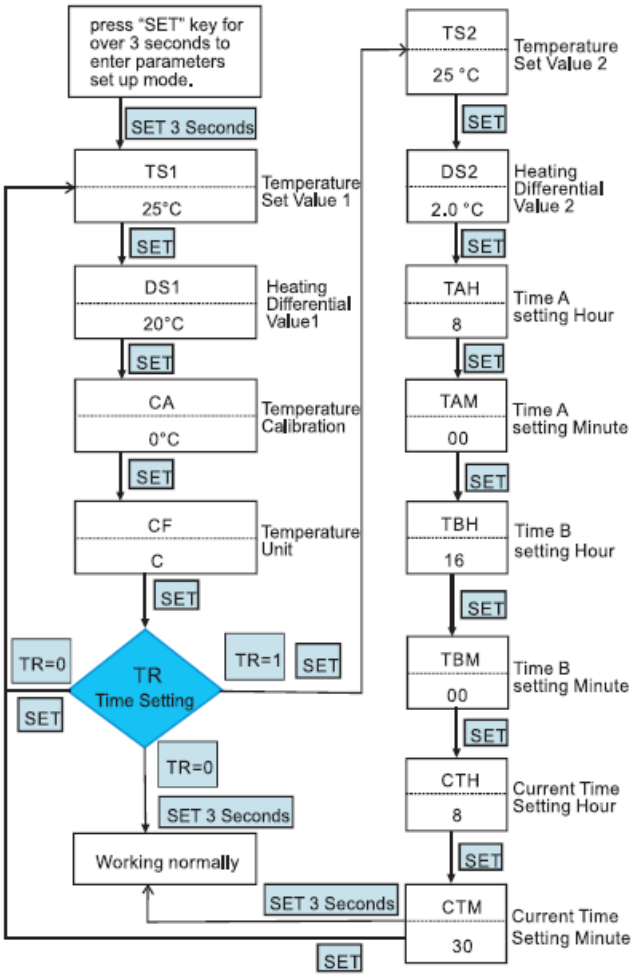
2. SV: Setting Value
    - Under working mode, display setting temperature;
    - Under setting mode, display setting value.
3. Work 1 Indicator Light: When the light is on, start heating.
4. Work 2 Indicator Light: —
5. SET Key: Press SET key for 3 seconds to enter menu for function setting. During the setting process, press SET key for 3 seconds to quit and save setting changes.
6. INCREASE Key: Under setting mode, press INCREASE key to increase value.
7. DECREASE Key: Under working mode, press DECREASE key to inquiry HD value; under setting mode, press DECREASE key to decrease value.
8. The Socket: Both sockets are for heating output, and they change synchronously.

Key Operation Instruction

How to set parameters

When the controller is working normally, press “SET” key for over 3 seconds to enter parameters set up mode. “SET” indicator light will be on. PV window displays the first menu code “TS1” ‘, while SV window displays according setting value. Press “SET” key to go to next menu and display according menu code, press “▲” key or “▼” key to set current parameter value. After setting done, press “SET” key for 3 seconds at any time to save the parameters change and return to normal temperature display mode. During setting, if there is no operation for 10 seconds, the system will quit setting mode and return to normal temperature display mode without saving the parameters change.

Setup Flow Chart



Remarks: TE error
If TR=1 and it is power-on again after power off. The window of SV displays TE error. When enter to the setting menu, it will jump to CTH code directly, then you can set present time (CTH, CTM) easily and quit into normal working status.

Menu Instruction

When TR=0 (Default)

Menu code	Function	Setting range	Default setting	Remarks
TS1	Temperature Set Value 1	-50～99.9°C/-58～210°F	25’Cl77″F	5.1
DS1	Heating Differential Value 1	0.3～15°C/1～30°F	1.0°C/2°F	
CA	Temperature Calibration	-15～15°C/-15～15°F	0°C/0°F	5.3
CF	Display in Fahrenheit or Centi grade	C/F	C	5.4
TR	Time Setting	0:Off; 1: On	0	5.2

When TR=1 (Time setting function is on)

Menu code	Function	Setting range	Default setting	Remarks
TS1	Temperature Set Value 1	-50～99.9°C/-58～210°F	25°C/77°F	5.1
DS1	Heating Differential Value 1	0.3～15°C/1～30°F	1.0°C/2°F	
CA	Temperature Calibration	-15～15°C/-15～15°F	0°C/0°F	5.3
CF	Display in Fahrenheit or Centi grade	C/F	C	5.4
TR	Time Setting	0:Off; 1: On		5.2
TS2	Temperature Set Value 2	0～99.9°C/32～210°F	25°C/68°F	5.1
DS2	Heating	0.3～15°C/1～30°F	1.0°C/2°F	
TAH	Time A setting Hour	0-23 hours	8(8:00)	5.2
TAM	Time A setting Minute	0-59 minutes	00(8:00)	
TBH	Time B setting Hour	0-23 hours	18(18:00)	
TBM	Time B setting Minute	0-59 minutes	00(18:00)	
CTH	Current Hour Setting	0-23 hours	8	
CTM	Current Minute Setting	0-59 minutes	30	

Temperature Control Range Setting (TS, DS)

When the controller is working normally, PV window displays current measured temperature, as well as SV window

displays temperature setting value. When the measured
temperature PVSTS (temperature set value)-DS (heating differential value), system enter heating status, the WORK1 indicator light will be on, and heating relay starts to work; when the measured temperature PV≥ TS (temperature setting), the WORK1 indicator light will be off, and heating relay will stop working. For example, set TS=25°C, DS=3°C, when measured temperature is lower or equal to 22°C (TS-DS) , system enters heating status; when the temperature raised to 25°C(TS), stop heating.

Cycle Time Setting (TR, TAH, TAM,TBH, TBM, CTH, CTM)
When TR = 0, time setting function is off, and there are not parameters TAH, TAM, TBH, TBM, CTH, CTM showing in the menu.
When TR=1, time setting function is on.
Time A~ Time B~ Time A is a cycle, 24 hours.
During Time A~ Time B, the controller runs as TS1 and DS1 setting; during Time B ~ Time A, the controller runs as TS2 and DS2 setting;
e.g. Set as TS1=25, DS1=2, TS2=18, DS2=1; TR=1, TAH=8, TAM=30, TBH=18, TBM=0, CTH=9, CTM=26
During 8:30-18:00 (Time A~ Time B), the temperature controls between 23°C~25°C(TS1 – DS1~TS1); During 18:00 to the next morning 8:30 (Time B~ Time A), the temperature controls between 17°C~18°C(TS2-DS2~TS2);
Parameter CTH and CTM are used for current time setting. The setting time is 9:26.

Temperature Calibration (CA)
When there is deviation between measured temperature and actual temperature, use temperature calibration function to align the measured temperature and actual temperature. The corrected temperature is equal to temperature before calibration plus corrected value (corrected value could be positive value, 0 or negative value).

Display in Fahrenheit or Centigrade unit (CF)
Users can select display with Fahrenheit or Centigrade temperature value according to their own habit. Default setting is display with Centigrade temperature value. For displaying with Fahrenheit temperature value, set CF value as F.

ATTENTION: when CF value changed, all the setting value will be recovered to factory settings.

Error Description

Sensor Fault Alarm: when temperature sensor is in short circuit or open loop, the controller will initiate sensor fault mode, and cancel all the actions. The buzzer will alarm, LED displays ER. Buzzer alarm could be dismissed by pressing any key. After faults solved, the system will return to normal working mode.

Over-temperature Alarm: when measured temperature exceeds the measuring range (less than -50°C /-58° F or higher than 99 °C/210 ° F), the controller will initiate over- temperature alarm mode, and cancel all the actions. The buzzer will alarm, LED displays HL. Buzzer alarm could be dismissed by pressing any key. When temperature returns to measuring range, the system will return to normal working status.

TE error
When setting TR=1 and if it is power-on again after power off, the “beep – beep” alarm in 0.5Hz frequency of the buzzer. The temperature controlled by the standard of TS1 while PV window displaying the current temperature and the window of SV displaying TE error. At this time, Press any keys can stop the alarm. When enter to the setting menu, it will jump to TH code directly, then you can set present time (TH, TM) easily and quit into normal working status.

Troubleshooting Guide

Issues	Causes	Solutions
The probe reading is incorrect.	1. The probe is placed in a area with poor temperature circulation. 2. The probe is damaged.	1. Adjust the position of the probe. 2. If the probe was used in liquids, dry it using a hairdryer and then test it at room temperature. 3. Check if the probe is intact. 4. If the deviation is small, use the CA function to calibrate.
Heating output will not turn on.	1. Incorrect settings. 2. Incompatible heater. 3. Output malfunction.	1. Verify that the settings are correct. 2. The heater power is within the range of 100-240V, 10A. The heater can automatically turn on when plugged in. The heater does not have a built-in temperature control, or the built-in temperature control does not affect the ITC-306T control. 3. There is no problem with 1&2 please: • Unplug the controller. • Press and hold the 'SET' button. • Plug the controller to power on, then release the 'SET' button • Quickly press the ' ▲ ' button (do not press the ' ▼ ' button). The 'work1' indicator and output should activate. If the heater still does not work, please contact customer service.
Heating output will not turn off.	1. Incorrect settings. 2. Heater power exceeds limit. 3. Output malfunction.	1. Verify that the settings are correct. 2. The heater power is within the range of 100-240V, 10A. 3. There is no problem with 1&2 please: • Unplug the controller. • Press and hold the 'SET' button. • Plug the controller to power on, then release the 'SET' button • Quickly press the ' ▲ ' button (do not press the ' ▼ ' button). If the heater still does not off, please contact customer service.

Shenzhen Inkbird Technology Co.,Ltd.
support@inkbird.com

- Consignor: Shenzhen Inkbird Technology Co., Ltd.
- Office Address: Room 1803, Guowei Building, No.68 Guowei Road, Xianhu Community, Liantang, Luohu District, Shenzhen, China

- Manufacturer: Shenzhen Inkbird Technology Co., Ltd.
- Factory Address: 6th Floor, Building 713, Pengji Liantang Industrial Area, No.2 Pengxing Road, Luohu District, Shenzhen, China

MADE IN CHINA

DESIGNED BY INKBIRD

Please keep this manual properly for reference. You can also scan the QR code to visit our official website for product usage videos. For any usage issues, please feel free to contact us at support@inkbird.com.

Warm tips

- To quickly jump to a specific chapter page, click on the relevant text on the contents page.
- You can also use the thumbnail or document outline in the top left corner to quickly find a specific page.

Documents / Resources

	INKBIRD ITC-306T Plug and Play Temperature Controller [pdf] User Guide ITC-306T Plug and Play Temperature Controller, ITC-306T, Plug and Play Temperature Controller, Play Temperature Controller, Temperature Controller, Controller

References

- User Manual