Kalstein®

Electric-heated Thermostatic Oil Bath

Model Series YR04973

Instruction Manual

Thank you very much for purchasing our Electric-heated Thermostatic Oil Bath Model Series YR04973.

Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation. After reading these documents, be sure to store them securely together with the “Warranty” at a hand place for future reference.

 Warning: Before operating the unit, be sure to read carefully and fully understand important warnings in the operating instructions.

Kalstein®

OUR SERVICES

Benefits and Support

In Kalstein France, we take care of the full satisfaction of our customers, that is why we provide value-added services of the highest level based on our experience.

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In any part of the world, receive your induction or training from our specialized team of engineers

Quick Response

Our work team is always available to response all your consults or questions, in order to support you in any situation.

#Letsgivemore 💚

Thanks to your purchase, a donation will be made to a non-profit foundation that fights against breast cancer and helps most vulnerable communities.

Technical Support

Enjoy of personalized advice for the correct preventive and corrective maintenance of your equipment, thanks to Kalstein's manuals and articles, special catalogues and video tutorials.

Delivery Logistics

We take care of all the necessary logistics for the dispatch of your goods, whether is by sea, land or.air.

Kalstein Worldwide

With more than 25 years growing with our customers, Kalstein's multiformat and modern content, is now present in more than 10 countries and increasing.

※ PRODUCT DESCRIPTION

Electric heating constant temperature oil bath boiler is mainly used for distillation, desiccation, concentration and warm-maceration of chemicals or biologics, it's conventional indispensable instruments prepared in laboratories by various universities and colleges, secondary specialized schools, scientific research enterprises and institutions.

※ PRODUCT STRUCTURE

This product adopts liner which is one shot shock and extrusion using imported stainless steel and its shell is made of high-quality cold rolled steel and is treated with plastic spraying technology, shinny and wear-resisting. With the electric heating pipe gripped into the oil, it can heat fast and keep high heat efficiency, low power consumption. By intellectual digital temperature control, it will check the rise and fall of temperature so as to ensure the precision of temperature control.

※ Usage

1.The oil bath shall be placed on a stable platform.

2.Connect to a power supply consistent with the requirement of this instrument and reliably ground the grounding terminals of the socket of power supply used.

3.Open the power switch and the power supply indicator light is on. Set the required temperature, and the temperature controller begins to display the temperature inside the working chamber.

4.Refer to the instructions of temperature controller for digital temperature controller and intelligent temperature controller.

※ Safety Precautions

1.The power supply must be in line with the voltage required by the product. Favorable grounding protection must be provided.

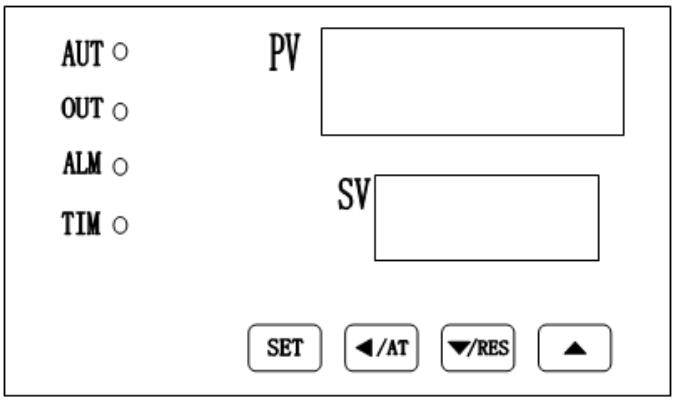
2.During use, do not touch the heating pipe by your hands to avoid being scalded.

※ TECHNICAL PARAMETER

Model(integrated chamber)	YR04973	YR04974	YR04975	YR04976
Controller	PID			
Voltage	220V/50Hz 110V/60Hz			
Power(W)	1000W	1200W	1600W	2000W
Tem-range(℃)	RT.+5～250℃			
Temperature resolution	0.1°C			
Temperature fluctuation	≤±0.5°C			
Division accuracy	≤±1°C			
Timer	999 minutes			
Recycle Design	Optional			
Magnetic	Optional			
Safety	Over current protection; Over temperature alarm; Mechanical temperature limiter.			
Chamber Size(mm)	300*240*150	300*240*200	500*290*150	500*290*200
Product Size(mm)	390*280*240	390*280*290	600*350*240	600*350*290
Packing Size(mm)	440*330*290	440*330*340	650*400*290	650*400*340

OPERATION INSTRUCTION

1. Panel Instructions



1-1. Indicator light function

1) AUT： It flickers during self-tuning, it is not bright in any other state.

2) OUT： It is bright when heating output.

3) ALM： It is bright when there is a temperature alarm.

4) TIM： It is bright when time is set, it flickers in the process of timing.

1-2. Button function

1) 【SET】: In normal state, press this button to enter the setting state.

2) 【◄/AT】: "SHIFT" button. In the setting state, click this button to shift the set value.
In normal state, press this button for 6 seconds to enter the auto-tuning selection state.

3) 【▼/RES】: "DEC" button. In the setting state, click this button to decrease the set value.
If you keep pressing this button, the value will reduce continuously. In the normal state, when the timer ends, press this button for 3 seconds, the controller will restart to work .

4) 【▲】: "INC" button. In the setting state, click this button to increase the set value. If you keep pressing this button, the value will increase continuously.

2. Operation and using

2-1. When the controller is switched on, All displays light up for 2 seconds, display windows show the version number and controller model for 2 seconds, then it starts running.

2-2. Temperature and Time Setting

1) Without Timing Function :

In the normal state , press the "SET" button to enter the temperature setting state, windows display the prompt "SP" and the temperature set point value. Using the "SHIFT"、"DEC" and "INC" buttons, user can edit the temperature set value. Press the "SET" button again, the controller will return to its normal state, the setting value will be saved automatically.

2) With Timing Function :

In the normal state , press the "SET" button to enter the temperature setting state, windows display the prompt "SP" and the temperature set point value. Re-press the "SET" button to enter the time setting state, windows display the prompt "ST" and the time set point value. Press the "SET" button again, the controller will return to its normal state, the set values will be saved automatically.

When the time is set to "0", it indicates the timer is inoperative, the controller will run continuously, the under window will display the temperature set point value. If there is time set, the under window displays the running time, its decimal point and the "TIME" indicator are lit, when the timer starts, its decimal point and the "TIME" indicator flicker. When the timer ends, the under window will display the "End" prompt, the buzzer will sound for 5 minutes, it can be muted by pressing any button, press the "DEC" button for 3 seconds, the controller will restart to work .

2-3. If the upper window show the prompt "---", it indicates that the temperature sensor has faults or temperature exceeds the measuring range or the controller itself is faulty, the controller will cut off the heat output automatically, the buzzer will sounds continuously, "ALM" indicator is lit, Please check the temperature sensor and its wiring carefully.

2-4. When over temperature alarm, the buzzer beeps continuously, "ALM" indicator is lit, the heat output is cut off. If the over temperature alarm is caused by the change of the temperature setting value, "ALM" warning light is lit, but the buzzer does not beep.

2-5. When the buzzer sounds, press any key to mute.
2-6. Independent thermostat

3. Auto-tuning

In the normal state, press the “SHIFT” button for 6 seconds, the controller will enter the auto-tuning selection state, the upper window displays the prompt “AUT”, the under window displays "0", change "0" to "1" by pressing the “INC” button, then press the “SET” button, the controller will run the auto-tuning program, the “AUT” indicator flickers. After auto-tuning end, the indicator stops flickering, PID parameter value is saved automatically. In the auto-tuning process, press the “SHIFT” button for another 6 seconds, the controller will stop the auto-tuning program.

During the Auto-tuning process, if over temperature alarm, the buzzer does not beep, "ALM" indicator is not lit, the heat output will be cut off; the “SET” button is invalid, the under window always displays temperature set point value.

4. Internal parameters settings

In the normal state, press the “SET” button for 3 seconds, windows will display the prompt “Lc” and the password value. Adjust the password to the required value, then press the “SET” button again, it will enter the internal parameters setting state. Press the “SET” button for another 3 seconds, it will return to the normal state, the set value will be saved automatically.

Parameter table 1

Prompt	Name	Function description	(Setting range) Factory value
Lc	Password key	When “Lc=3”, enter the next parameters.	0

ALH	Over-temp alarm	If "PV>(SV+ALH)", the ALM indicator turns on. The buzzer sounds and the heat output turn off.	(0～100.0℃) 5.0
P	Proportional band	Adjustment of proportional function.	(0～100.0℃) 10.0
I	Integration time	Adjustment of integration function.	(1～2000S) 300
D	Differential time	Adjustment of differential function.	(0～1000S) 200
T	Control cycle	The temperature control cycle.	(1～60S) 5
Pb	Temperature deviation correction	It is usually used to correct errors in low temperature measurement. Pb = Actual value – PV	(-50.0～ 50.0℃) 0
PL	Temperature slope correction	It is usually used to correct errors in high temperature measurement. PK = 1000 × (Actual value – PV) ÷ PV	(-999～999) 0

Parameter table 2

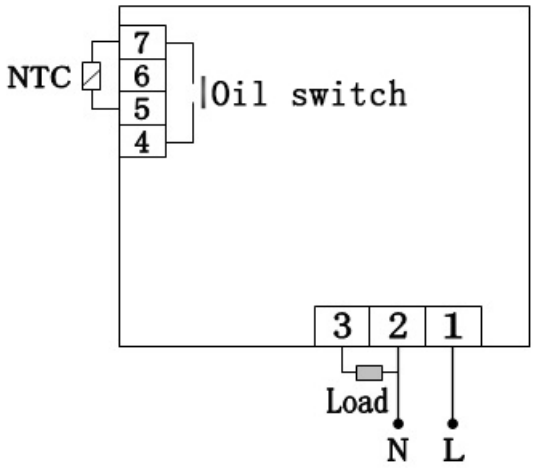
Prompt	Name	Function description	(Setting range) Factory value
Lc-	Password key	When "Lc=9", enter the next parameters.	0
doT	Temperature decimal point	0: No decimal point display 1: With decimal point display	(0～1) 1
ndT	Timer mode	0: No timer function. 1: Start timing when the temp reaches the set value. 2: Start timing as soon as the controller starts working.	(0～2) 1
Hn	Timer unit	0: Minute. 1: Hour.	(0～1) 0
SPd	Timer parameter	If "ndT=1", start timing when "SV－SPd≤PV≤SV＋SPd"	(0.1～50.0℃) 0.5
EH	Timer end mode	0: Continue to control the temperature 1: Stop temperature control	(0～1) 0
oPn	Door parameter	Automatic judge door opening. 0: invalid; 0: valid	(0～1) 0

nP	Power percentage	Percentage of max heating power output.	(0～100%) 100
Co	Heating prohibited deviation	When “PV≥SV+Co”, heating output will be cut off	(0～50.0℃) 50.0
SPH	Max set value	The maximum temperature set point value.	(0～100.0℃) 100.0

Parameter table 3

Prompt	Name	Function description	(Setting range) Factory value
Lc	Password key	When “Lc=567”, enter the next parameters.	0
rST	Factory reset	0: cancel; 1: confirm	(0~1) 0

5. Wiring



※ Common Fai

Failure	Cause	Handling method
No power supply	Bad contact between plug and socket The fuse is burnt.	Replace the plug or socket tube. Replace the fuse with same specification.
No temperature rise	The temperature control instrument is broken. The sensor is broken. The set temperature is lower than oil temperature. The heating pipe is burnt.	Replace the instrument. Replace the sensor. Reset the temperature. Replace the heating pipe.
The difference	The temperature control instrument is	Replace the temperature control

between displayed temperature and actual temperature is too big.	broken. The temperature sensor is broken.	instrument. Replace the temperature sensor.

※ **Storage and Transport**

During handling, violent vibration and collision are strictly forbidden. Also, dampness shall be prevented.

Product Quality Guarantee

Cut off along this place

Dear user,

Thank you very much for purchasing our product. Our company will provide you with most high-quality services.

1. Please keep the guarantee and purchase invoice properly.
2. The guarantee will be filled by the product selling unit. It comes into force after the user and selling unit sign and seal.
3. If product quality problem occurs, please contact with the technical service department or the repair division in the local representative office of our company.

Details rules:

1. Guarantee period: our company will provide free guarantee repair service within one year since the date when the instrument is purchased.
2. Free repair service in the guarantee period: our company is only responsible for the failures and damages caused by the quality problems of the instrument under normal operation. Quick-wear parts are not included in the service.
3. Any of the following conditions is not included in the free repair service scope:
(1) The user cannot provide the maintenance sheet or alter the purchase invoice without authorization.
(2) Occurrence of damages due to failure of using the product according to the operation procedure stipulated in the operation manual.
4. If the guarantee period expires or quality problems occur due to the damage of quick-wear parts, our company will provide accessories with factory prices for a long term. Repair fee will be charged if you need to repair the instrument.

Guarantee repair voucher:

Name of product		Specification & model	
Date of manufacture		Product No.	
Date of purchase		Tel.	
Dealer (seal)			