



## THERMOSTATIC HEATING INCUBATOR

INC83-040



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- In order to ensure safety to use this equipment, please read through this manual
- Put this manual in a convenient place for later use
- Our company doesn't provide a safe guarantee if not use according to the instruction manual
- This manual only for user and authorized technician, should be properly kept
- Not notice if any changes because of product improvement
- No right to copy this manual in without our company authorization

# 1. Safety and Warning signs, label explication

This manual has important use information, user should comply with it.

Put this manual in convenient place for later use.

The symbols appear to the equipment and the manual will guide you safely and correctly to operate this equipment, avoiding the possible harm


 Warning:

It will cause serious harm or fatal accident if not comply with warning

 Attention:

It will cause human injury, equipment damage and loss of relative property if not comply with attention


 Prohibit


 Must follow


Symbols on equipment:

 AC

 Protective conductor terminal





 Power is connected

 Power is disconnected

 Warning, Attention, Caution and Danger

# 2. Safety operation and Preventive measure

 Warning:

	Do not place this equipment outdoors. if it exposed in the rain, it may cause creepage and electric shock.
	Only professional person have qualification to install this equipment. If not, it may cause electric shock or fire.
	Should place this equipment on the firm ground in case of tumble. If not, it may cause injury because it capsizes.
	Do not place equipment in humid environment or a place with dripping water. Otherwise it may cause creepage or electric shock

	Do not place equipment near flammable materials and volatile substance. Otherwise it may cause explosion or fire.
	Do not place equipment in the area where surrounded by acidic or corrosive gas, Otherwise it may cause creepage or electric shock
	Please use power supply socket with protective conductor terminal in case electric shock. If power socket without protective conductor terminal, it is necessary to install it by licensed technician.
	Do not connect protective conductor terminal through gas, water pipe, telephone line or lighting arrester which will cause electric shock.
	Please use specified power supply. If not, it may cause electric shock or fire.
	Do not put volatile and inflammable substances in the inner chamber of equipment if it cannot be sealed, or it may cause explosion or fire.
	Do not insert nail or wire and similar metal objects into any inlet or outlet of equipment, or it may cause electric shock or injury
	Please operate this equipment in safe area if it stores any toxic ,harmful and radioactive substances, or it may do harm to human and environment.
	Make sure to cut off power supply before maintaining equipment in case it causes electric shock or injury .

Table 1

Warning:

	Do not touch any electric components or switch with wet hand, or it may cause electric shock
	Make sure wear mask when maintaining the equipments to prevent any harmful drug substance and airborne particle.
	Do not splash water onto the equipment, or it may cause electric shock or short circuit .
	Do not place container which is filled of water on the top of equipment, or it may cause creepage or electric shock.
	Do not drag, twine or bind power cord. Do not damage power plug, or it may cause electric shock or fire hazard.
	Do not use loose power plug, or it may cause fire or electric shock
	Do not dismantle, repair or refit equipment without authorization and guidance from our company. It may cause fire or injury due to the improper handling.
	Please unplug the power if equipment is malfunctioning. It may cause fire or electric shock if it continues.
	Press power plug instead of pulling the power cord when you want to unplug the power from power socket, or it may cause electric shock or fire hazard because of short circuit.
	Should unplug the power before moving equipments. Do not damage power cord. Damaged cord may cause electric shock or fire.






	Should unplug power plug if it's not used for long period, or it may lead to electric shock, leakage or fire because of wear and tear of insulator.
	Keep out of reach of children and the door unsealed if the equipment is not supervised or not used for a long period.
	Should inform authorized technician when you dispose the equipment. Should dismount the equipment door to prevent suffocation and such accident.
	Keep out of reach of children with the wrapping plastic.

Table 2

 Notice:







	Please clean the dust on the power plug and then insert it into power socket properly, or it may cause over-heating or strike sparks
	Check temperature, humidity, segment and timing and other setting value when reboot the equipment after been short circuited or cut off by power supply. Otherwise may cause damage lost of products stored inside.
	Please place equipment in ventilative and dry place if not used for long period after purchase, or it may lead to equipment malfunctioning when use.
	Should arrange proper carrying-tools or qualified person when moving equipments. Prevent tumbling when moving equipment, it may cause damage of equipment or human injury.
	Ensure enough space when moving equipment. If you need to carry it to the second or higher floors, make sure the elevator has enough space for the equipment and working personal.
	Do not put acidic, alkaline or corrosive substance in the inner chamber if the container is not sealed. Otherwise it will cause corrosion or damage to the components of equipment.

Table 3

### 3. Instruction (Application, Working principle, Technical parameters)

#### Application

Heating incubator is a constant temp. equipment with heating control, highly precise and advanced. Widely used in biological chemistry, chemical pharmacy, medical institution, industrial and mining enterprises, university and colleges, scientific research, etc. can be used for seed, cell, bacteria culture, etc.

#### Working principle

Heating incubator transfers actual temperature detected from temperature sensor into signal, through microcomputer control to heater towards required temperature.

#### Technical parameters

- 1、 Temp control range :  $+5\sim 65^{\circ}\text{C}$ ;
- 2、 Temp. resolution:  $0.1^{\circ}\text{C}$
- 3、 Temp fluctuation range :  $\pm 0.5^{\circ}\text{C}(+3^{\circ}\text{C}\sim 50^{\circ}\text{C})$ ;
- 4、 Temp uniform range :  $\leq \pm 1.0^{\circ}\text{C}(+3^{\circ}\text{C}\sim 50^{\circ}\text{C})$ ;
- 5、 Power voltage : AC 110V/60Hz;
- 6、 Timing range: 0~99hour, 0~9999min
- 7、 Equipment class: class I
- 8、 Working ambient : ambient temp  $10\sim 40^{\circ}\text{C}$  relative humidity 70% below ;

## 4. Product Structure

### 4.1 Components

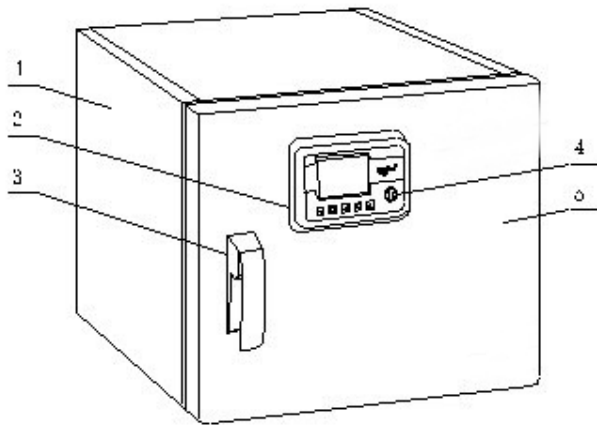


Figure 1

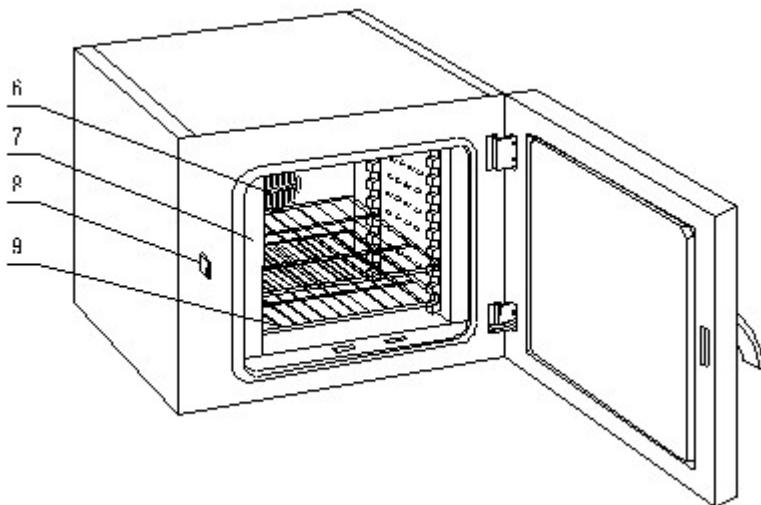


Figure 2

1. incubator body
2. controller
3. door handle
4. power supply
5. outer door

6. fan cover
7. inner chamber
8. door button
9. mesh board

## 4.2 Control panel

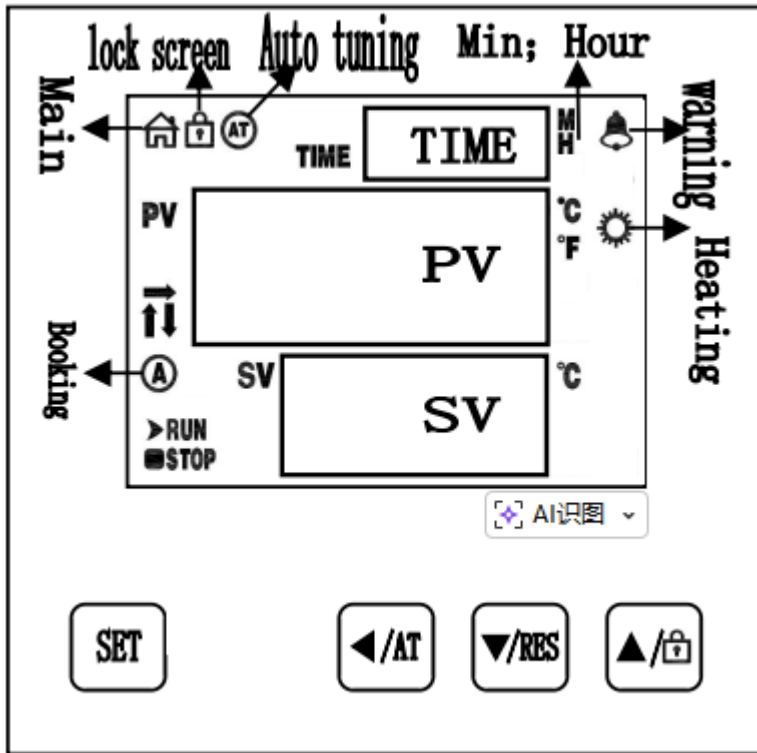


Figure 3

Key defines

1. **【Set】**: Set key, in the main screen state, click this key to enter the temperature and time target value Setting state, long press this key for 3 seconds to enter the internal parameter Setting state.
2. **【◀/AT】**: Shift / Auto-tuning, in the Setting state, click this key to change the Setting value. In the main screen state, long press this key for 6 seconds to temperature auto-tuning selection state.
3. **【▼/RST】**: Decrease / rerun key. In the Setting state, click or long press this key to decrease the Setting value. In the main screen state, long press this key for 3 seconds to restart the run.
4. **【▲/🔒】**: Increase / lock screen key. In the Setting state, click or long press this key to increase the Setting value. In the main screen state, click this key to lock or unlock the screen.

PC-D9000 VA LCD indicator Defines

1. **【Main】** indicator: In the normal working state (non-Setting state), the lamp will be on, otherwise it will be off.
2. **【Lock】** indicator: It will be on when the screen is locked, otherwise it will be off.
3. **【AT】** indicator: The lamp flashes during temperature self-adjustment and goes out instead.
4. **【Alarm】** indicator: The lamp will be on when there is temperature deviation alarm or abnormal temperature measurement. It will flash when there is temperature deviation alarm. Under normal condition, it will be off.
5. **【Heating】** indicator: The lamp will be on when there is heating output, otherwise it will be off.

6. 【A】 indicator: The lamp will be flash in reservation timing, otherwise it will be off.
7. 【RUN/STOP】 indicator: Only STOP lights up at the end of timing, and RUN lights up in other states.
8. 【↑/→/↓】 indicator: It will flash when heating, constant temperature and cooling

## 5. Installation

In order to optimize the performance of equipment, please install the equipment in the following condition:

Attention: ambient temperature 10~30°C ;relative humidity less than 70%

1. Avoid exposure to the sunlight.

Do not place it in direct sunlight, or it won't reach predicted performance

2. An efficient ventilative place

If you operate this equipment in a narrow and concealed room, it may lead to over-heating and malfunctioning. Minimum safe distance between equipment and wall is 10CM

1. Keep away from heat source

Don't install the equipment near heating source. External excess heat will affect performance of the equipment and may cause malfunctioning

2. Flat and firm ground

Make sure to install it in flat and firm ground. Uneven surface or leaning installation may damage equipment or injure people. Proper installation can avoid shaking and noise

3. Avoid humid place

Install the equipment in a place where humidity is less than 70%. Otherwise it may cause creepage or electric shock.



Warning

Do not place this equipment outdoors. If it exposed in the rain, it may cause creepage and electric shock. Do not place equipment in humid environment or a place with dripping water. Otherwise it may cause creepage or electric shock.

Otherwise it may cause explosion or fire. Do not place equipment in the place where has acidic and corrosive gas, or corrosion will cause creepage, electric shock or equipment damage.

1. Unpacking

Remove packing materials, open the door for ventilation. Please use neutral detergent to clean if the shell and panel is dirty. Then wipe with wet cloth and at last with dry clean cloth

2. Level equipment

Fix equipment with the front brake-wheel after installation in case equipment moves.

To prevent shaking on uneven ground, pads maybe needed.

- 3 Protective conductor terminal



Warning

Please use power socket that has protective conductor terminal in case of electric shock. If it is not connected, has to install protective conductor terminal by licensed technician.

Do not connect protective conductor terminal through gas, water pipe, telephone line or lighting arrester which will cause electric shock.

4. Idle equipment



Before setting equipment aside, empty water in the humidifier and remove internal moisture thoroughly. Be sure the inner chamber is dry and cool before closing the door .

## 5. Moving equipment

### 5.1 Preparation before hand

Before moving equipment, empty inner chamber to prevent objects falling off.

When equipment is running the first time, please operate according to following:

- Take out the shelf boards and other accessories inside.
- Clean the inner chamber with gauze
- Insert the shelf boards into inner chamber according to your experiment and requirement
- If you place samples on the same shelf, should keep space between samples for air circulation.



Attention : Do not use NaCl or other Halide solution to clean this equipment, or it will cause rust

## 6. Operation methods

### 1. Controller power on display

Type PC-D9000: PV displays **【P(K) - d9】** , the SV displays the version number for about 3 seconds and then enters the normal display state.

### 2. Reference and Setting of temperature and time

#### 1) No-timing function:

In the main screen state, click the **【Set】** to enter the temperature Setting state, the PV area displays prompt SP, and the SV area displays the temperature Setting value, which can be modified to the required Setting value through the **【shift】** 、 **【increase】** 、 **【decrease】** , then click the **【Set】** to exit the Setting state, and the Setting value will be saved automatically.

#### 2) Timing function:

In the main screen state, click the **【Set】** to enter the temperature Setting state, the PV area displays the prompt SP, the SV area displays the temperature Setting value, and the modification method is the same as above; then click the **【Set】** to enter the time Setting state, the PV area displays the prompt ST, TIME area displays the time Setting value; then click **【Set】** to exit the Setting state, and the Setting value

will be saved automatically. When the Setting time is "0", it means continuous operation. When the Setting time is not "0", before the timing starts, if the timing direction is count-down, the TIME area will display the timing time; if the timing is count-up, the TIME area will display "0". When the timing starts, "indicator" will flash. When the time is up, the operation will end. The TIME area will display End, and the buzzer will beep for EST seconds (see 7. Parameter TABLE-1). At this time, long press the **【decrease】** for 3 seconds, the operation can be restarted.

Description: "indicator" is "time unit";

### 3. Reservation function (see 7. Parameter TABLE-6)

When an reservation time is Set, heating operation is prohibited.

PC-D9000 type: In reservation timing, A indicator flashes, and the count-down TIME area displays the reservation running time.

### 4. Abnormal temperature measurement alarm

If the PV area displays "----", it means that the temperature sensor is faulty or the temperature exceeds

the measuring range or the controller itself is faulty. The controller will automatically disconnect the heating output, the buzzer will sound continuously and the alarm light will be on. Please check the temperature sensor and its wiring carefully.

#### 5. Deviation over temperature alarm (see 7. Parameter TABLE-1)

When the upper deviation over temperature alarm occurs in process, the buzzer beeps, the alarm light is continuously on, and the heating output is disconnected. When the lower deviation over temperature, the alarm will occur and flash. If the over temperature alarm is generated due to changing the temperature Setting value, the alarm light will be on, but the buzzer will not sound.

#### 6. Lock screen function.

Three screen locking modes are provided. See [7. Parameter TABLE-1] for details.

Password unlocking: In the lock screen state, click the **【increase】**, the input password prompt PA is displayed in PV area, and the password is displayed in SV area. After entering the correct password, click the **【Set】** to unlock.

7. When the buzzer sounds, press any keys to silence.

## 6.1 Auto-tuning system

When the temperature control effect is not ideal, the system can be auto-tuning. There will be a large overshoot in the process of auto-tuning. Please take this factor into consideration before system auto-tuning.

In the running state and the main screen state, long press the **【shift】** for 6 seconds to enter the system auto-tuning selection state. The PV area displays the auto-tuning prompt AT, and the SV area displays "0". You can click the **【increase】** or **【decrease】** to select the display "1", and then click the **【Set】** to enter the system auto-tuning state. The AT light flashes. After the auto-tuning is completed, the

AT light stops flashing. The controller will get a better set of PID parameters and save them automatically. In the process of system auto-tuning, long press the **【shift】** for 6 seconds to stop the auto-tuning program. In the process of system auto-tuning, if there is an over temperature alarm of upper deviation, the alarm light will not be on and the buzzer will not sound, but the alarm relay will be automatically disconnected. In the process of system auto-tuning, the **【Set】** is invalid.

## 6.2 The internal parameters of the temperature are seen and Set.

In the main screen state, long press the **【Set】** for 3 seconds, the password prompt LC will be displayed in PV area, and the password will be displayed in SV area. Modify the required password through **【increase】**、**【decrease】** and **【shift】**, and then click the **【Set】**. If the password is incorrect, the instrument will automatically return to the main screen state. If the password is correct, enter the internal parameter setting state, and then click the **【Set】** to modify each parameter in turn. In this process, long press the **【Set】** for 3 seconds to exit this state, and the parameter value will be saved automatically. See the table below for details:

Description:

1) In the parameter TABLE, the temperature setting is referred to as SP, the temperature measurement is referred to as PV.

2) In the TABLE below, PT100, M=400.0°C, Type K, M=600.0°C

Parameter

The Indicator	Parameter Name	Description of the parameter function	(Range) Initial value
Lc	Password.	Lc=3,parameter values can be viewed and modified	0
ALH	Upper Deviation Over-temperature Alarm	PV>SP+ALH, over-temperature alarm of upper deviation	(0~100.0℃) 20.0
ALL	Lower Deviation Over-temperature Alarm	PV<SP-ALL,over-temperature alarm of upper deviation Description:ALL=0,the lower deviation alarm is invalid	(0~100.0℃) 0
Pb	Temperature Measurement Deviation Correction	Used to correct errors in temperature measurement. Pb = Actual temperature— PV	(-50.0~50.0℃) 0
PL	Temperature Measurement Slope Correction	It is commonly used to correct errors arising from high temperature measurement. PL = 1000 * (Actual temperature—PV) ÷ PV Description: In Parameter 【TABLE - 4】 ,En = 1 This feature is invalid.	(-999~999) 0
ndT	Timing Mode	0:No-timing; 1:Constant temperature timing; 2: Run timing.	(0~2) 1
Tdn	Timing Direction.	0:Count-up; 1:Count-down	(0~1) 0
Hn	Time Unit.	0:Minute; 1:Hour	(0~1) 0
SPd	Constant Temperature Deviation	SP—SP d ≤PV≤SP+SP d, Enter a constant temperature state.	(0.1~50.0℃) 0.5
EST	End Timing Prompt Time	When the timing is over, the buzzer will prompt the time. Note: EST = 9999, indicates a permanent prompt.	(0~9999s) 60
EH	End Timing Constant Temperature Controller	0: Turn off the heating output after timing; 1: Keep constant temperature controlling after timing	(0~1) 0
LF	Lock Screen Function	0: Lockless screen function; 1: Lock screen function, unlock without password. 2: Lock screen function, need password to unlocked.	(0~2) 0
LdT	Lock Screen Delay	In the main screen state, if no key is pressed in the delay LDT time, the controller will automatically lock the screen. Description: LDT = 600, the delay screen locking function is invalid	(10~600s) 30
PAd	Unlock Password	The password must be entered to unlock it.	(0~9999) 1

Add	Mail Address	Local Address Description: PC-E9000 has no communication function.	(1~32) 1
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Table 4

Argument TABLE

The Indicator	Parameter Name	Description of the parameter function	(Range) Initial value
Lc	Password	Lc=6,parameter values can be viewed and modified	0
dP	Demarcation Point	High and low temperature PID control demarcation point. When $SP \leq DP$ , it is low temperature control, otherwise it is high temperature control.	(0~M°C) M
T	Control period	Heating control period.	(1~30s) 5
P1	Proportional Band 1	The time proportion regulation in low temperature control. Description: P1 = 0, it is digit controlling. Note: when P1 = 0, it is position control.	(0~300.0°C) 35.0
I1	Integral time 1	Integral regulation in low temperature control.	(1~2000s) 300
d1	Differential time 1	Differential regulation in low temperature control.	(0~1000s) 200
nP1	Power Output 1	Maximum power percentage of heating output at low temperature control.	(0~100%) 100
nH1	Heating Off Deviation 1	In low temperature control, if $PV \geq SP + nh1$ , it will turn off the heating. Description: please use this parameter with caution!	(0~50.0°C) 50.0
P2	Proportional Band 2	The time proportion regulation in high temperature control. Description: P2 = 0, it is digit controlling. Note: when P1 = 0, it is position control.	(0~300.0°C) 35.0
I2	Integral Time 2	Integral regulation in high temperature control.	(1~2000s) 300
d2	Differential Time 2	Differential regulation in high temperature control.	(0~1000s) 200
nP2	Power Output 2	Maximum power percentage of heating output at high temperature control.	(0~100%) 100
nH2	Heating Off Deviation 2	In high temperature control, if $PV \geq SP + nh2$ , it will turn off the heating. Description: please use this parameter with caution!	(0~50.0°C) 50.0

Table 5

Argument TABLE

The Indicator	Parameter Name	Description of the parameter function	(Range) Initial value
Lc	Password.	Lc=9,parameter values can be viewed and modified	0
doT	Display Decimal point	0: No decimal point for temperature measurement and set value; 1: The temperature measurement and the set value have 1 decimal point.	(0~1) 1
oPn	The Door Control Function	0: No use; 1: Use Note1	(0~1) 0
SPL	Minimum. Set value	The minimum value of the temperature setting.	(-50.0~20.0°C) 0
SPH	Maximum Set value	The maximum value of the temperature setting.	(20.0~M°C) 300.0
ouT	Heating. Output Mode	0: normal state ; 1: The alarm relay output (normally opening point) is changed to heating output, and the original heating output is invalid. Note2	(0~1) 0
db	Nonsense Region	The nonsense region of the temperature measurement.	(0~5.0) 0.0
ndo	Switch Output Mode	0: At the end of timing; 1: Over-temperature alarm; 2: Enter the constant temperature state Note3	(0~2) 1
ndA	Temperature Alarm Mode	0: Only the temperature deviation over-temperature alarm; 1: Temperature up and down deviation over-temperature alarm concurrently.	(0~1) 0

Table 6

Note 1: In order to avoid misjudgment, please select to turn off the open door judgment function for the equipment that does not need to open the door or the temperature drops quickly.

Note 2: When the ouT value changes from 0 to 1, the heating control T period automatically changes to 20 seconds and saves; when the ouT value changes from 1 to 0, the heating control T period automatically changes to 5 seconds and saves. This function is only applicable to PC-9x01 (driving solid-state SSR output) . It is forbidden to change the initial value of other types of instruments, otherwise the control will be abnormal!

Note 3: Only PC-D9201 (driving solid-state SSR with switch output) has this function. Switch output means that the normally opening point of switch relay is closed.

Argument TABLE

The Indicator	Parameter Name	Description of the parameter function	(Range) Initial value
Lc	Password.	Lc=12,parameter values can be viewed and modified.	0

En	Correction Enable	0: disable multi-segment correction function; 1: Enable Note: when En = 1, 【parameter TABLE-1】 is invalid.	(0~1) 0
U1	Correction Point 1	If $PV \leq U1$ , use E1 to correct the temperature slope.	(0-MMC)) M
E1	Correction Point 1	$E1 = \text{Actual temperature} - PV$	(Note4) 0
U2	Correction point 2	If $PV \leq U2$ , use E2 to correct the temperature slope.	(U1-M-C)) M M
E2	Correction point 2	$E2 = \text{Actual temperature} - PV$	(Note4) 0
U3	Correction point 3	If $PV \leq U3$ , use E1 to correct the temperature slope.	(U2-M-C)) M M
E3	Correction point 3	$E3 = \text{Actual temperature} - PV$	(For4) 0

Table 7

Note4: Temperature Unit is Celsius: -180.0~180.0; Temperature Unit is Fahrenheit: -180.0~324.0  
Description: Before adopting this correction, Pb in 【parameter TABLE-1】 should be equal to 0, the measured value of temperature display should be equal to the corrected value + Pb

Argument TABLE

The Indicator	Name	Description of the parameter function	(Range) Initial value
Lc	Password	Lc=27, parameter values can be viewed and modified modified at Lc s27.	0
Fc	Temperature unit	0: Celsius; 1: Fahrenheit.	Note5

Table 8

Note 5: Type PT100: (0~1) 0; K-type thermocouple: (0~0) 0

Argument TABLE

The Indicator	Name	Description of the parameter function	(Range) Initial value
Lc	Password	Lc=81, parameter values can be viewed and modified	0
APT	Reservation Time	Set power-up time Description: APT = 0, this function is invalid.	(0~9999min) 0

Table 9

Argument TABLE

The Indicator	Name	Description of the parameter function	(Range) Initial value
Lc	Password	Lc=567, parameter values can be viewed and modified	0
rST	Factory Reset	0: Cancel; 1: Conform.	(0~1) 0

Table 10

## 7. Routine using and maintenance













	Do not capsize any drying oven when moving.
	Do not change the settings frequently during process, it may affect the control accuracy and the life of use.
	The machine is equipped power switch and circuit breaker, if failure occurs during operation, please cut off the power and check the control circuit if it's intact, and then check the other parts. (See wiring diagram)
	Make sure to the door is shut. If the door is not closed properly, the device may not be able to reach maximum performance. When closing the door, do not slam the door to avoid damage of the locking system.
	Do not use corrosive solution to wipe the exterior in order to maintain the appearance of the device. Please use dry cloth or alcohol wipe to keep the inner chamber clean.
	When the device is not in use, keep the chamber dry, and cut off the power supply.
	In order to keep temperature evenly inside the chamber, always check the axial fan in the chamber if it is functioning properly. During the experiment, in order to allow air circulation, objects inside the chamber should not be placed too close and blocking the vent. Do not touch and collide the temperature probe inside, it may cause failure of temperature control.
	Secure the shelf. Otherwise it may damage the cultures.
	Do not lean against the glass or apply pressure on the glass, it might cause injury.
	Do not lean against the door of the device. To prevent tipping of the equipments or equipment damage, personal injury by the damaged door.
	When failure occurs, please arrange professionals or contact with the factory sales department. User should not attempt to repair or fix it.
	Our company products have "Three Guarantees". Two years warranty, free to repair (exclude mis-operation and consumable items) when equipment has failure since the purchase day.

Table 11

## 8. Assistant Configuration Connection

Instructions for use of the converter

1. In order to receive remote data between the different standard serial interface computer, external device or intelligent instrument. Must provide conversion of standard serial interface. The converter is compatible with RS-232, RS-485 standard, capable of converting single-ended RS-232 signal to a balanced differential RS-485 signals. (It can connect 16 controller of this series together at the same time)

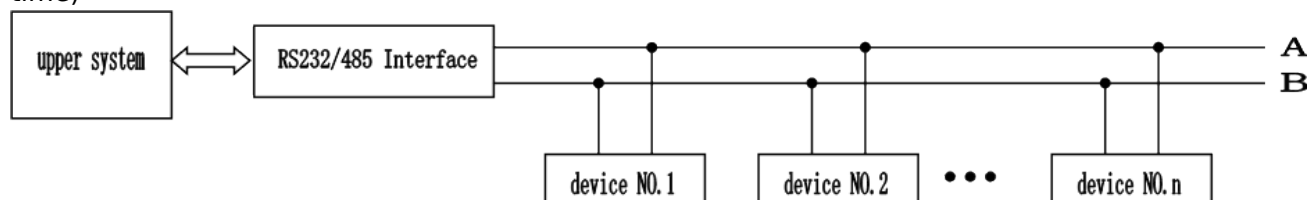


Figure 4

Trouble shooting

1. Data communication failure

(1) Check RS-232 port connection whether is correct.

(2) Check RS-485 port output connection whether is correct.

(3) Check port whether is connected.

2. Data missing or fault

Please check data communication equipment rate and format is in accordance.

## 9. Trouble shooting

Trouble	handling
Sensor failure display (- - -)	Temperature sensor abnormal, please check temperature sensor (model:PT100)
Temp. can't reach of setting value	·Check screen if it displays heating, If it's heating, heating tube damage or control panel failure or circuit failure.
Temp. rises too slow	Check fan whether is working properly (Open the door). If it's not running, check according to the wiring layout
Screen can not display	·Please check if the power socket is ~110V ·Please check if the power switch is on ·Please check power switch, if it is tripping operation, please check wiring layout.

Table 12



# 10. Specification

Model	INC83-040
Interior Dimension	570×580×593
exterior Dimension	350×350×350
Effective volume	40L
Power	420W
Shell	Cold-roll steel sheets with powder-coat treatment
Inner chamber	mirror surface SUS304 stainless steel
Door	With heating preservation design
Shelf	High quality carbon steel and surface is chrome plating, adjustable space
Heating insulation system	Polystyrene foam
Temp. control system	PID system auto-setting
Heating system	Tube type heating element
Fan	Centrifugal fan
Temp. sensor	Sum sung Temp. sensor PT100
Screen	LCD(Liquid Crystal Display),Chinese /English Display
Warning system	Temp. upper limit warning ; Temp. sensor failure warning with sound/light
Weight	42kg
Shelf	2
Optional Accessories	Switch port ,Portable printer,

Table 13

Note: may change product design and specification without notice.

# 11. Packing List

No .	Name	Quantit y	Not e
1	Finish product	1	
2	instruction manual	1	
3	shelf	2(40L)	

Table 14



Labstac LLC

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