Kalstein

Mold incubator

(LCD display)

Model YR05339

Instruction Manual

Thank you very much for purchasing our Kalstein´s Mold incubator (LCD display) Model YR05339

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®

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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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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.

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

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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.

Notices

- In order to ensure safety to use this equipment, please read this manual carefully.
- Make sure put this manual in 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, please preserve it.
- Not notice if any changes because of product improvement.
- No right to copy this manual in without our company authorization.

Safety notices and warnings

This manual has important use information, please comply.

Make sure put this manual in convenient place for later use.

The symbols appear to the equipment and the manual, in order to you can safely and correctly operate this equipment, avoiding the possible harm.

● "warning" symbol

⚠ warning

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

● "notice" symbol.

⚠ notice

It will cause injury, equipment damage and the loss of relative property if not comply with notice.

■ The meaning of symbols：

⃠ prohibiting symbol

● Abide symbol.

■ Symbols in equipment

~ communication

⏚ protect earthing conductor symbol.

| power supply symbol

○ cut off power supply symbol.

⚠warning, notice, caution and danger symbol

Safety operation and Preventive action

⚠ warning

⃠ Don't place this equipment outdoors. if wet it in the rain, it will cause creepage and electric shock.

❗ Only professional person has qualification to install this equipment. If not, it will cause electric shock or fire.

❗ ought to place this equipment on the firm ground in case turnover. if not, it will cause injury because turn over or capsize.

⃠ Don't place equipment in damp atmosphere. or it will cause creepage or electric shock.

⃠ Don't place equipment near to inflammable materials and volatile materials. or it will cause explosion or fire.

⃠ Don't place equipment in the area where there are acid and corrosive gas, or it will cause creepage or electric shock.

⏚ please use power supply socket with earthing device in case electric shock. If power socket without earthing device, it is necessary to install earthing device by qualified technician.

⃠ Don't connect earthing device through gas, water supply pipe telephone line or lighting arrester. which will cause electric shock.

❗please use specified power supply. If not, it will cause electric shock or fire.

⃠Don't put volatile and inflammable substances in the inner chamber of equipment if it is not sealed, or it will cause explosion or fire.

⃠Don't insert iron nail or iron wire and so on metal objects into any inlet or outlet of equipment, or it will cause electric shock or injury.

❗ please operate this equipment in safe area if store any toxic, harmful and radioactive substances. or it will do harm to health and environment.

❗make sure to cut off power supply in case electric shock or injury before maintain equipment.

⃠Don't open exterior door when on the process of sterilization, or it will hurt operator.

Safety operation and Preventive action

⚠ warning

⃠ Don't touch any electric components or switch in wet hand, or it will cause electric shock.

❗ make sure not to suck any drug and airborne particle around the equipment when maintaining, or it will be harmful for your health.

⃠ Don't let water splash the equipment, or it will cause electric shock or short circuit.

⃠ Don't put container which is full of water on the top of equipment, or it will cause creepage or electric shock.

⃠ Don't drag, twine, bind power supply wire, don't damage power supply plug, or it will cause electric shock or fire hazard because worn power wire or plug.

⃠Don't use loose plug of power wire, or it will cause fire or electric shock.

⃠ Don't dismantle, repair or refit equipment without our authorization and our guidance, or it will cause fire or injury.

❗ please unplug power plug if equipment running abnormally, or it will cause fire or electric shock.

❗ press power plug instead of pull power plug wire when you want to unplug the power plug from power socket, or it will cause electric shock or fire hazard because of short circuit.

❗ought to unplug power plug before removing away equipment. don't damage power wire, or it will cause electric shock or fire.

❗ ought to unplug power plug if not use equipment for a long time, or it will lead to electric shock, leakage or fire.

❗ be sure not to let children near equipment and the door can't close completely if no one supervise the equipment or not use equipment for a long time.

Safety operation and Preventive action

⚠ notice

! equipment scrap disposal should be done by relevant person. ought to dismount door in case cause stifling.

⃠ Don't put packing plastic bag in the place children can get, or it will cause stifling.

! please clean the dust on the power plug and then insert it into power socket tightly. or it will cause heating or strike sparks.

! need to check temperature, humidity, segment and timing and other setting value when reopen equipment if happen to cut off power supply.

! please put equipment in ventilative and dry place if not use equipment for a long time after purchase. or it will lead to equipment running abnormally when restart equipment.

! should prepare proper carry-tools or qualified person when carry equipment, don't let equipment turn over in case damage equipment or harm person.

! make sure enough width and height to remove equipment, if you need to carry it to the second or above floors, be sure that the elevator has enough space to the equipment.

⃠ Don't put acid, alkali and corrosive substance in the inner chamber if the container is not seal, or it will cause components of corrosion.

Instruction (application, working principle, technical parameters)

application

- WS constant clime chamber is a high precision thermostatic equipment, can be used for plant cultivation, breeding test, bacteria, mold, microbial cultivation & preservation, BOD determination and so on. Which is also used in biological genetic engineering, medical treatment, health and epidemic prevention, medical test, agriculture and animal husbandry, aquatic and other scientific research institutions.

performance

Transfer actual temperature and humidity which got from temp. sensor and humidity sensor into electrical signal. Microcomputer control system control heater to get needed temperature, control compressor to get needed humidity.

technical parameters

1、 volume：150L.250L.400L;

2、 Temp control range ： 0～60℃;(with humidity5～50℃);

3、 Temp fluctuation range ： ±0.5℃(10℃～40℃);

4、 Temp uniform range ： ±1℃(10℃～40℃);

5、 Humidity control range ： 40-95%RH(10℃～40℃);

6、 Humidity fluctuation ： ±2%;

7、 Power voltage ： 220V/50Hz;

8、 Input power：1250W(150L) 1400W(250L) 1550W(400L);

9、 Working ambient ： ambient temp 10~30℃ relative humidity70% below ;

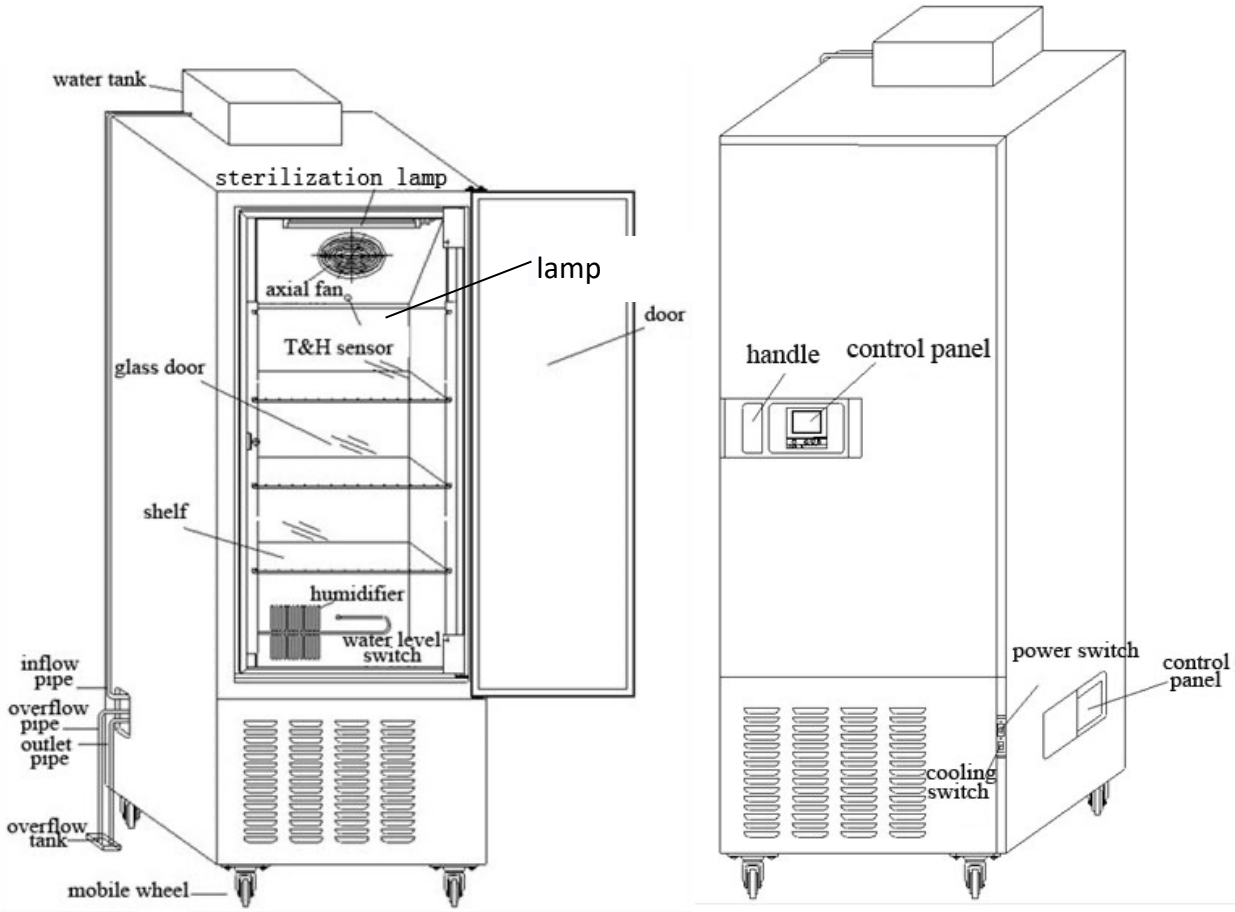
10、 refrigeration：R134;

11、 Equipment class：class I

Notice ： this equipment has low temperature auto-defrost function, it is normal that there is fluctuation when low temperature auto-defrost

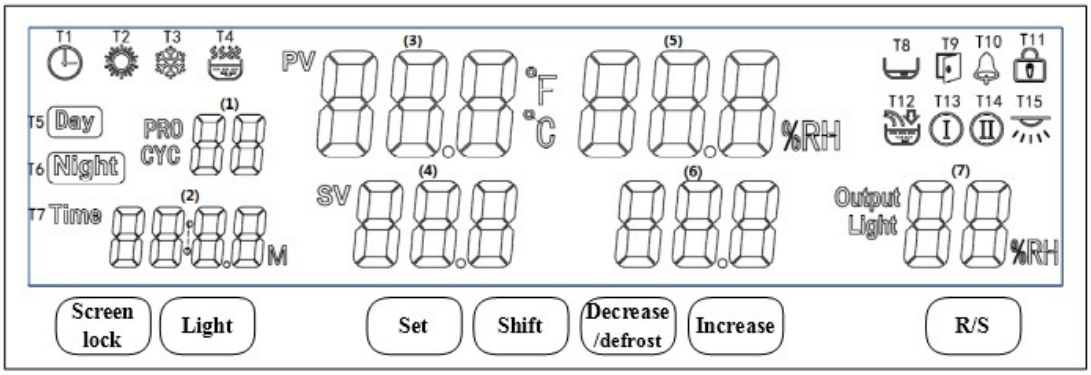
Structure

Components



Structure

Control panel



Symbol definition

T1: appointment: its twinkling means the controller enter appointment mode, meanwhile, the (2) area displays appointment time (count down).
T2: heat: its lightening means heater working.
T3: refrigeration: its lightening means air compressor working.
T4: humidity: its lightening means humidifier working.
T5: daytime: its lightening means the machine is in daytime mode.
T6: night: its lightening means the machine is in night mode.
T7: timer: its twinkling means the timer working, meanwhile, the (2) area displays setting time (count down).
T8: lack of water: its lightening means lack water; its twinkling means low-level water alarm.
T9: door open: its lightening means the door is open.
T10: alarm: its lightening means temperature or humidity alarm; its twinkling means low-temperature or high-temperature protection.
T11: screen lock: its lightening means screen is locked; one cannot change any setting value before unlocking it.
T12: watering: its lightening means water pump working.
T13: defrosting: its lightening means the defrosting system working.
T14: valve: its lightening means valve working.
T15: illumination/sterilization: its lightening means lamp working, its twinkling means UV lamp working.

Display window.

(1)Area: cycle/segment
(2)Area: timer or setting time
(3)Area: current temperature value
(4)Area: temperature setting value
(5)Area: current humidity value
(6)Area: humidity setting value
(7)Area: illumination or heating output power

Button definition

Screen lock: in normal mode, one can press on this button for 2 seconds to lock or unlock the

screen.

Light: in normal mode, one can click on this button to switch on/off the lamp.

Set: in normal mode, one can click on this button to set value of temperature, humidity, illumination and others; or press on this button for 3 seconds to enter inner parameters.

Shift: in setting mode, one can click on this button to shift digit position; in normal mode, one can click on this button to shift daytime or night mode; in programmable mode, one can click on this button to inquire cycles and segments.

Decrease/defrost in setting mode, one can click on this button to decrease setting value; in normal mode, one can press on this button for several seconds to activate defrosting function.

Increase: in setting mode, one can click on this button to increase setting value

R/S: in normal mode, one can click or press on this button to start or stop the controller running.

Equipment installation

installation

1.Take off packing materials

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

2.Fix equipment with the front brake-wheel after installation in case equipment to move

Earthing

⚠ warning

Please use earthing conductor power socket in case cause electric shock. If the power socket is without earthing it must be installed by a qualified technician. Don't ground through gas, water supply pipe, telephone line or lighting arrester .it will cause electric shock because of incomplete conductor circuit.

4. If idle equipment

Before idle, empty water in the humidifier, and completely remove internal moisture. Be sure the inner chamber is completely dry before close the door.

5. Before move equipment

Before move equipment, empty water in the humidifier. or it will cause creepage or electric shock because of overflow water or splashed water.

Preparation before operation

When equipment running in the first time, please operate according to following.

1.take off the baffles.

2.Clean the cavity wall with gauze which is soaked by alcohol and then use dry cloth to wipe-dry.
3.Put the baffles into inner chamber according to your experiment of requirement.
4.Put water tank on the top of equipment before use, then insert water pipe into water inlet and overflow which in the left of equipment (refer to component picture) and put storage water tank under the overflow pipe and water outlet for spare use.
5.Pour enough pure water into water tank.

⚠ **notice ： don't use NaCl or other Halide solution to clean equipment ,or it will cause rust**

Operation

Display

Operation and usage

1. After power on, (3) area displays "PS", (5) area displays "V01", the buzzer beeps, and then, after 2 seconds, the controller will enter normal mode.

2. Setting values: after clicking on set button in normal mode, symbols "TIME "and "SV" twinkle, one can modify the setting value (digit position twinkling), by shift, decrease, increase buttons, and one can shift to next group value by another clicking on set button. After modification, one can press on set button for 1 seconds to quit setting mode, the setting value will be saved automatically.

In programmable mode, segment value position twinkles after clicking on the set button. In this time, one can modify the segment number by decrease or increase button, and inquire setting value of time, humidity, temperature, and illumination in every segment.

In day/night mode, after clicking on set button, "DAY" symbol will twinkle, then, one can choose daytime or night mode by decrease or increase button, after another click on set button, one can inquire and modify every value of current mode, by increase and decrease buttons.

3. **Setting of cycles and segments:** in programmable mode or day/night mode, when the controller is in stop situation, after pressing on "set" button for 3 seconds, the (1) area displays "Lc", the (2) area displays "0", users can adjust the password to 3 by increase/decrease buttons, so that the controller enters cycle and segment setting mode. PRO----total program number, CYC----total cycle number.

4. fault reminder:
Temperature alarm：symbol"**℃**"flashes quickly when upper deviation occurs，symbol"**℃**"flashes slowly when lower deviation occurs;
Humidity alarm: symbol"**%RH**"flashes quickly when upper deviation occurs，symbol"**%RH**"flashes slowly when lower deviation occurs;
If the (3) area displays "---", user should check the sensor and controller.

Inner technical parameters

In normal mode, press on set button for 3 seconds, the (1) area will display “Lc”, users can input right code and click on the set button one more time to enter different inner parameters. After adjusting the value of parameters, please do remember to press on the set button for another 3 seconds to quit setting mode. The value adjusted will be saved automatically.

parameter 1

symbol	name	function	（range） factory value
Lc	password	when “Lc=9”, this parameter group can be inquired and adjusted.	0
U1	Running mode	0：constant value mode； 1：day/night mode, 99 cycles； 2：program mode, 1~30 segments，0~99 cycles	(0～2) 0
U2	Power down protection	0：no operation； 1：begin with the first segment； 2: restart from the power down time	(0～2) 0
U3	Timer adjusts	Modification value=【display value（s）-real value（秒）】*10 ÷ real value（m）。	(-999～999) 0
U4	Timing unit	1：minute 0~9999； 2：hour 0~9999	(1～2) 1
U5	Timing temperature point	When U5= display temperature-setting temperature, timer starts to work	(0～10.0℃) 0
U6	Timing humidity point	When U6= display temperature-setting temperature, timer starts to work	(0～50.0%) 0
U7	【R/S】time	Press on the【R/S】for U7 time to run/stop	(0～10s) 0
U8	Lock screen time	Lock screen time, 0 means unlock	(0～300s) 0
U9	Reminder time (stop)	The buzzer beeps for U9 seconds when running stop. 0 means buzzer beeps continuously	(0～300s) 0
UA	Illumination time	Illumination time, 0 means manual operation	(0～9999min) 0
Ub	address	Communication address	(1～16) 1

parameter 2

symbol	name	function	（range） factory value
Lc	password	when “Lc=103”, this parameter group can be inquired and adjusted.	0
TH	Temperature upper deviation alarm	when“display value＞set value+TH”，upper alarm occurs, heating and humidity cut down User can click on any button to stop buzzer	(0～20.0℃) 5.0
TL	Temperature lower deviation alarm	when“display value＜set value+TH”，lower alarm occurs, heating and humidity cut down User can click on any button to stop buzzer	(-50.0～0℃) 0
Tb	Zero adjust (low temperature)	Tb = real temperature - display temperature	(-99.9～99.9℃) 0

TA	Full adjust (high temperature)	TA = 1000 * （ real temperature - display temperature）÷display temperature	(-999～999) 0
TP	Proportional band	Adjustment of proportional function.	(0.1～50.0) 8.0
TI	Integration time	Adjustment of integration function	(1～2000s) 500
TD	Differential time	Adjustment of differential function.	(0～2000s) 200
TT	Heat period	Heating control period	(1～60s) 5
Tc	Low temperature cutoff	Heating cutoff point.	(-2.0～0℃) -0.5
To	Heat power	Heating max power percentage	(0～100%) 100

parameter -3

symbol	name	function	（ range ） factory value
Lc	password	when "Lc=203", this parameter group can be inquired and adjusted.	0
HH	Humidity upper deviation alarm	when"display value＞set value+TH"，upper alarm occurs, heating and humidity cut down User can click on any button to stop buzzer	(0～50.0%) 20.0
HL	Humidity lower deviation alarm	when"display value＜set value+TH"，lower alarm occurs, heating and humidity cut down User can click on any button to stop buzzer	(-50.0～0%) 0
Hb	Zero adjust (low humidity)	Tb = real humidity - display humidity	(-99.9～99.9%) 0
HA	Full adjust (high humidity)	TA = 1000 * （ real humidity - display humidity）÷display humidity	(-999～999) 0
HP	Proportional band	Adjustment of proportional function.	(0.0～90.0) 10.0
HI	Integration time	Adjustment of integration function	(1～999s) 200
Hd	Differential time	Adjustment of differential function.	(0～999s) 30
HT	Heat period	Heating control period	(0～60s) 5
Hc	Low temperature cutoff	humidity cutoff point.	(-50.0～50.0%) 0.0
Ho	humidity power	Humidity max power percentage	(0～100%) 100

parameter -4

symbol	name	function	（ range ） factory value
Lc	password	when "Lc=72", this parameter group can be inquired and adjusted.	0
Sr	Sterilizing	0：off； 1：on	(0～1) 0

ST	Sterilizing time	sterilizing time, 0 means manual operation	(0～9999min) 0

Alarm and safety functions

- **Temperature sensor failure alarm:** screen display: words, Temperature sensor malfunction compressors, heating stopped working, the alarm sound one second stop for one second, continuous ring to press any button to mute.
- **Humidity sensor failure alarm：** screen display: words, Humidity sensor anomalies compressors, heating stopped working, the alarm sound one second stop for one second, continuous ring to press any button to mute.
- **Temperature limit alarm：** Measured temperature exceeds the set temperature of 4 degrees, heating stopped working, the alarm sounds a second stop second, continuous ring to press any button to mute.
- **Humidity limit alarm：** The measured humidity exceeds the set temperature of 5% RH, humidifying stop working, the alarm sounds one second stop for one second, continuous ring to press any button to mute.
- **Low water level prompts：** The water level below the low water level ,control switch bit transhumance screen display: Please add water.

Routine using and maintenance.

⃠ Constant climate chamber in conveying prohibited inverted and greater than 45 degrees lie flat.

⃠ Do not frequently change the settings, to prevent the compressor start frequently caused by overload, affect the useful life of equipment.

❗ The machine is equipped power switch and circuit breaker, if operation is failure, please cut off the power and check the control circuit is intact, and then check the other parts. (See wiring diagram)

❗ Be sure to shut the inner door, and then shut the chamber door. If the inner door is not fully closed, even if the chamber door is closed, the device may not be able to maximum performance. When the door is closed, please be careful not to use too much force to cause damage to the door seals.

❗ Do not use corrosive solution wipe the exterior surfaces in order to maintain the appearance of the device, inside with a dry cloth or alcohol wipe, keep the chamber clean.

❗ When the device not in use, keep the chamber dry, and cut off the power supply.

❗ In order to ensure uniform temperature inside the chamber, you should always check the axial fan in the box is functioning properly. When in experiment, the box items should not be placed too close and not to block the fan vent, order to facilitate inside air circulation.

Do not touch and collision inside temperature probe, cause temperature runaway.

❗ Make sure the shelf is fixed, otherwise may damage the cultures.

⃠ Do not lean against the glass or glass pressure might cause injury to persons.

⃠ Do not lean against the doors, to result in personal injury by prevent tipping or door damaged, cause damage to the equipment.

❗ When equipment is failure, repair should need professionals or contact with the factory sales department, the user does not do any overhaul.

❗ Promise “Three Guarantees”, within two years repair free charge when.

equipment has failure since the purchase date.

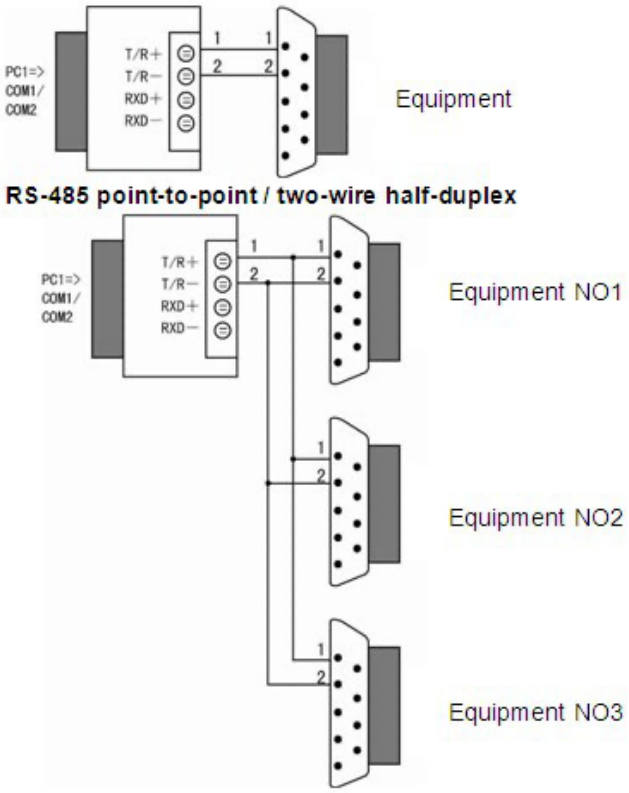
Optional using

RS-2

32/RS-485 instructions for use of the converter.

- In order to facilitate remote data communication between the different standard serial interface to the computer, an external device or smart instrument with standard serial interface conversion. The converter is compatible with RS-232, RS-485 standard, capable of RS-232 single-ended signal is converted to a balanced differential RS-485 signal.

RS-485 point-to-point / two-wire half-duplex



trouble shooting

1. Data communication failure
   (1) Check RS-232 port inside connection is correct.
   (2) Check RS-485 port inside connection is correct.
   (3) Check port is connected.
2. Data missing or fault.
   Please check data communication equipment rate and format is accordance.

Trouble shooting

(1) Trouble shooting

Trouble	handling
Sensor failure warning	·Heating sensor abnormal, please check heating sensor (model:PT100) ·Humidity sensor abnormal, please check humidity sensor, model: HIH-4021
Temp. can't reach of setting value	·Check electrical heating tube, power is 600W
Humidity can't reach of setting value	·Please check water level, water level should cover middle of the heating tube. ·Please check humidity heating tube. Power is 300W
Screen cannot display	·Please check socket is 220V ·Please check power is open ·Please check power switch, if it is tripping operation, please check wring layout.

(2) trouble shooting

1.Temp. sensor fault, with display: Temp. anomaly. PLS change temp. sensor.

2.Humidity sensor fault, with display :99% or 0%, PLS change Humidity sensor.

3.Water level has been opened in 5-minute, system will prompt system water fault, screen display: no water, please add water. Please check water system.

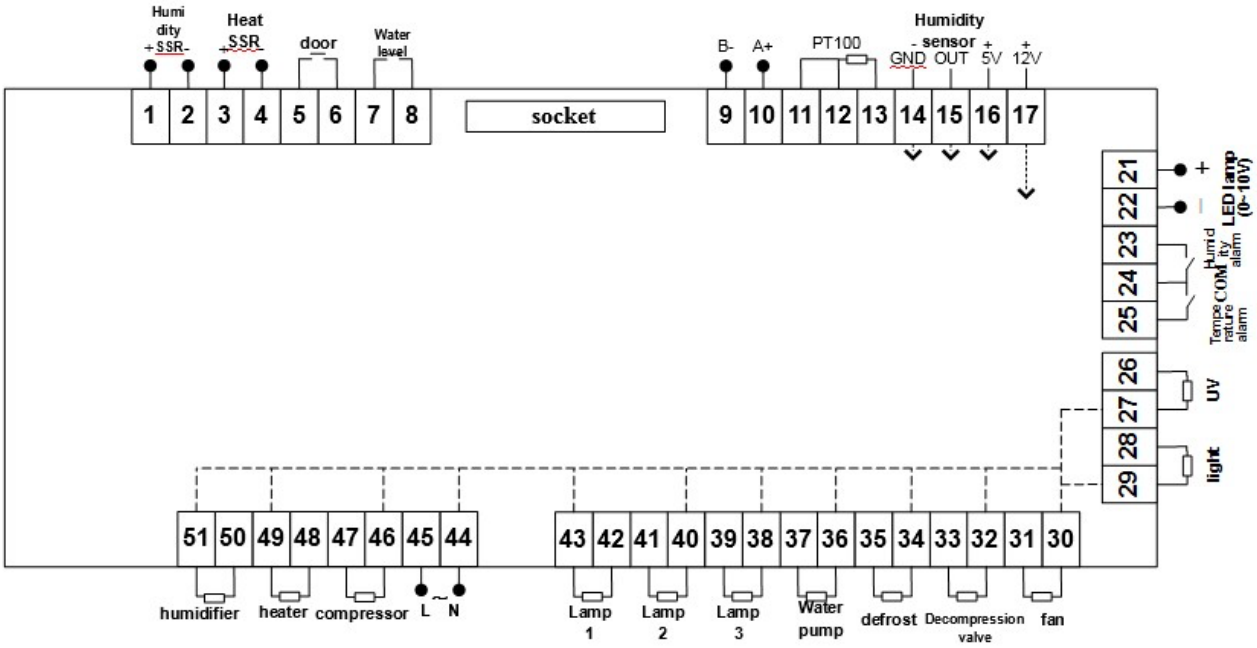
Specification

Name	YR series constant climate chamber		
Model	YR05337	YR05338	YR05339
Out Dimension	650×680×1410	650×740×1730	745×930×1700
Inside Dimension	508×389×757	508×449×1088	601×639×1052
Effective volume	138L	236L	392L
Shell	Cold-roll steel sheets with spraying treatment		
Inner shell	mirror surface SUS304 stainless steel		
Door	With heating preservation design		
inner door	Tempered glass (5mm)		
Shelf	Carbon steel with zinc-plate		
Heating preservation system	Polystyrene foam		
Cooling system	R134a (without fluorine), Green, environmental protection, energy saving		
Heating system	Use finned highly efficient heating tube		
Fan	Axial flow fan		
Humidity System	Use electric heating to control humidify stable		
Temp. sensor	Samsung Temp. sensor PT100		

Humidity sensor	Cybersen humidity sensor		
Displayer	LCD (Liquid Crystal Display), China Display		
Warning system	Temp. & humidity upper limit warning with screen prompt; Temp. & humidity sensor fault warning with screen prompt		
Weight	107kg	136kg	158kg
Optional Accessories	Switch port, Portable printer,		

Note: Kalstein may change product design and specification without notice.

Wiring layout



Packing List

No.	Name	Quantity	Note
1	Finish product	1	
2	instruction manual	1	
3	shelf	3(150L) 4(250L) 4(400L)	

4	Inlet pipe	1(0.3m)	With a hose hoopφ8-20
5	outlet pipe	1(0.3m)	With a hose hoopφ8-20
6	Overflow pipe	1(0.3m)	With a hose hoopφ8-20