



LABSTAC

OPERATION MANUAL
Drying Oven
OVE12-225

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01. Description

This drying oven is used in biology, chemical pharmaceutical, medical treatment unit, industry and mining enterprise, universities and colleges and scientific research for drying, melting wax, sterilizing and disinfecting

2. Principle and structure

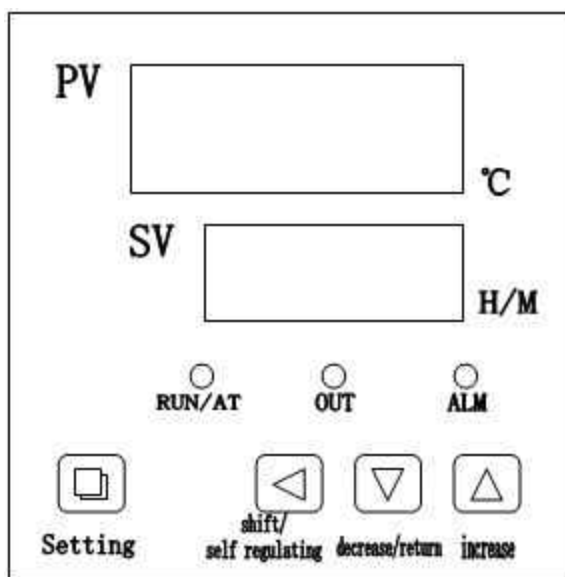
Heating tube is the back of inner chamber, fan in the back of chamber, temp. controller control the constant and change of temperature, the air flow inflows inner chamber via heating tube, and the function of fan is to make inside temperature more uniform. arc-design, shelf space can be adjusted, built-in temp. probe.

Wool rock as thermal insulation material between working chamber and shell, shell is made of steel plate, the shell is deal with spray paint, inner chamber is made of zinc plating or stainless steel. the observation window is made of double tempered glass. silicone door seal to make sure better sealability, enhance the stillstand performance of inner chamber. this drying oven is equipped with intelligent temp. control system. (with timing function and precise temp. control)

Use method

Make sure the switch is in the "off" position before power on, check whether it is broke circuit or leakage, connect power, turn on power switch

Panel display



Indicator

1. "RUN/AT" indicator: it is on when running, it is out when over flashing when auto-setting
2. "OUT" indicator: it is on if there is heating output, or it is out
3. "ALM" indicator: it is on when over-temperature alarming, or it is out
4. WL and WH is invalid indicator

02. Operation and use method

1) When power is connected, the upper screen displays "InP", the lower screen displays "scale value", it will enter normal status after 3 seconds

2) The reference and setting of temperature and soaking time

A: if no timing function

press "set" key, to access temperature setting mode, the lower screen displays "SP", the upper screen displays setting temperature (the units digit flashing first), then modify the needed setting value via shift, increase and decrease key ; press "set" key again to log out setting mode, the modified setting value will be saved automatically. It will return to normal display model without pressing any key in one minute.

B:if with timing function

press "set" key, to access temperature setting mode, the lower screen displays "SP", the upper screen displays setting temperature (the units digit flashing first), then modify the needed setting value via shift, increase and decrease key ;press "set" key again, enter setting mode of soaking time, the lower screen displays "St", the upper displays soaking time setting value (the units digit flashing first), press "set" key again to log out setting mode, the modified setting value will be saved automatically

when the soaking time is set to "0", it means without timing function, controller run continuously, the lower screen displays setting temperature ;when setting value is not "0", the lower screen displays running time or setting temperature, the last decimal point is on, after measured temperature reach to setting temperature, timer start timing, the decimal point is flashing, time is up, running stops, the lower screen display "End", with continuous beeper .after running is over, long press "decrease /restart" key to reboot

3) There is something wrong with sensor

If the upper screen displays "-----" it means there is something wrong with sensor, temperature is outside of measured range or controller fails , controller will disconnect heating output automatically, and beeper keeps beeping and alarm indicator is on, please check the temperature sensor and connection.

When over-temperature alarming, beeper beeps, "ALM" alarm light is on; when lower-temperature alarming, beeper beeps, "ALM" alarm light is flashing, if change setting temperature result in over-temperature alarming , "ALM" alarm light is on, without beeper

4) Press any key to mute

5) "Shift " key :press this key to modify setting value.

6) "Decrease" key: press this key to decrease setting value, long press this key to continuously decrease setting value

7) "Increase" key: press this key to increase setting value, long press this key to continuously increase setting value

8) in setting mode, without pressing any key within 1 min, it will return to normal mode automatically

A).Auto-setting

Please proceed with auto-setting if the control effect of temperature is not ideal .if temperature soaring seriously when auto-setting, take this factor into consideration fully before user proceed with system auto-setting

Under non-setting status, long press "shift/At" for 6 seconds to enter auto-setting , "RUN/AT" light flashing, this light stops flashing after auto-setting is over, controller will obtain a better PID parameters .and the parameters will be saved automatically. during auto-setting, long press "shift/At" for 6 seconds to stop auto-setting .

When auto-setting, if there is over-temperature, "ALM" alarm light is out, no beeper, but the heating alarm relay will be disconnected automatically. "set" key is unavailable during auto-setting. when auto-setting, no matter whether there is soaking-time setting, the lower screen always displays setting temperature.

B).Interior parameters

Long press "set" key for 3 seconds, the lower screen displays password prompt "Lc ", the upper screen displays password value, to modify the needed password value via increase, decrease and shift .press "set" key again, if the password value is incorrect, it will return to normal mode automatically .if the password value is correct, then enter setting status of interior parameter, press "set" key again to modify parameter in turn .press "set" key for 3 seconds to log out and the parameters will be saved

03. Interior parameter -1

Parameter	Parameter name	Parameter function	(range) Factory default
Lc-	Password	When "Lc=3", check and modify parameter	0
ALH-	Over-temp. alarm	When test temperature > setting temperature, the alarm indicator is on, beeper beeps, disconnect heating output	(0.0~100.0°C) 20.0
ALL-	Lower-temp. alarm	When test temperature < setting temperature, the alarm is on, beeper beeps, disconnect heating output	(0.0~100.0°C) 20.0
T-	Control cycle	Heating control cycle	(1~60seconds) note: 1
P-	Proportion	Time proportion adjustment	(1.0~scale) 35.0
I-	Integral time	Integral action adjustment	(1-1000seconds) 200
d-	Differential time	Differential action adjustment	(0~1000seconds) 200
Pb-	Zero adjustment	Modify error margins of sensor (low temperature) Pb=actual temp.-test temp.)	(-12.0~12.0°C) 0.0
PK-	Full scale adjustment	Modify error margins of sensor (high temperature) PK=1000*(actual temp.-test temp.) /test temp.	(-999~999) 0

Note 1:the controller model is PCD-2xx2 (relay output), the Factory default of heating control cycle is 20 seconds, other model is 5 seconds

04. Interior parameter -2

parameter	Parameter name	Parameter function	(range)Factory default
Lc-	<u>Password</u>	When "Lc=9" check and modify parameter	<u>0</u>
Co-	Turn off heating output	When test temperature \geq setting temperature +Co , Turn off heating output	(0.0~50.0°C) 5.0
Hn-	Timing way	0:minute timing ;1:hour timing	(0~1) 0
rH-	Mileage value	The maximum value of setting temperature	(0~400.0°C) 300.0

The comparison table of english name and parameter prompt

parameter prompt	SP	St	Lc	AL	T	P	I	d
english name	SP	St	Lc	AL	T	P	I	d
parameter prompt	Pb	Pk	Co	Hn	oP	rH		
english name	Pb	Pk	Co	Hn	oP	rH		

Notice :if user want to reach ideal control effect of temperature but without system auto-setting , give P、I、D initial value according to below parameters of different equipment's. if still can't reach ideal control effect of temperature, please proceed with system auto-setting

p(proportion)	(integration)	D(differential)	Equipment style
35.0	200	200	Drying oven and oil bath equipment
15.0	200	200	Heating incubator
6.0	100	100	Water bath and water tank

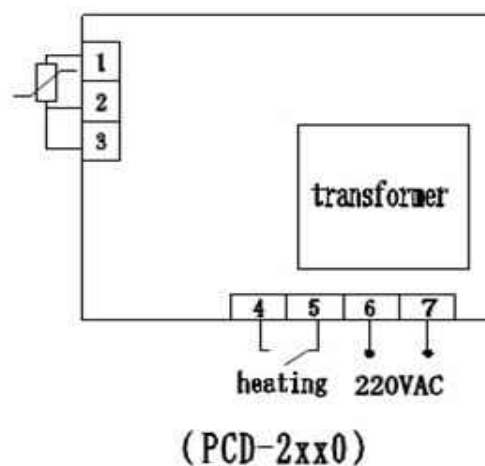
05. Notes

1. The samples should not be placed too crowded, so as not to affect convection inside the chamber. Please connect the oven with protective conductor terminal according to relevant regulations. in order to be safe, don't touch electrical circuit which is in the left oven with hand and wet cloth
2. Don't splash water to observation door, or it may crack
3. Don't use this kind of oven to dry inflammable, volatile and explosive substance, or it may cause explosion

06. Maintain

1. Drying oven should be kept clean, please use cotton cloth to clean glass door, in order to avoid chemical reaction, do not use corrosive chemical solution to sweep
2. If drying oven is not used for long period, in order to avoid corrosion, should be applied with neutral grease or vaseline in the electroplating pieces. and placed in a dry indoors
3. Please operate this oven according to our manual, if there is something wrong with this oven , please refer to below solution

07. Wiring layout



08. Trouble shooting and Failure analysis and solutions

Trouble	Failure analysis and solutions
1.The equipment fails to work after power is connected	<ul style="list-style-type: none"> * there is something wrong with power , ask an electrician for help * heating wire burned out, test the two end resistance value of heat ware ,if resistance value is 0 , It means that the heating wire is short-circuit , it occurs switch trip ; if the resistance value is hundred Kohm or infinity ,it means that heat ware is open circuit power switch blade is off The power switch is on ,check the control circuit board and cable
2.temperature stops rising	<ul style="list-style-type: none"> * Check timing whether it is timing settings; * Most users do not understand the function, when reaches timing value, the heating wire stops working, the fan fails to work, temperature stops increasing. * Check whether the fan is working , if fails (use multi-meter to test the voltage of fan pin whether it is 220V), then call us to send accessories to solve * Checking control panel with a multi-meter to see whether there is output, according to the drawing; (Drawings attached).
3.motor fails to run	Result : it is running, but the airflow is unable to circulate ,lead to temperature rises slowly ,then contact us
4.handle is broken	Replace and contact supplier
5.there are differences between the temperature which panel displays and mercury temp.	<p>premise:</p> <p>Thermometer need to be tested whether it is qualified then to measure</p> <p>The installation position of mercury :hang the thermometer in the center of chamber ,avoid putting on the shelf to measure</p> <p>Refer to the parameter adjustment table</p>
6.temperature appears bounce or keep stationary ,or abnormal "----"	<ul style="list-style-type: none"> * there is something wrong with temperature sensor , should to be replaced . Note : sensor adopts Pt100 platinum resistance

Technology parameter

Name Model	Inner chamber(mm)			Exterior size (mm)			Voltage (V)	Power (KW)	temp. °C	Fluctuation °C
	H	W	D	H	W	D				
OVE12-225	750	600	500	980	895	780	220	2.5	+5~250	±1%

After-sales service

- (1) One year warranty, lifetime service . and this product is warranted for a period of twelve months from the date of original purchase, please retain your receipt to establish proof of purchase!
- (2) Don't dismantle, repair or refit equipment without authorization and guidance from our company. This warranty does not extend to the repair or refit of any products.
- (3) This warranty does not cover any damages which is caused by improper operation, improper power output, or improper cable connection.
- (4) If the product is located outside in china, during the warranty period, we will offer the parts for free. but not bear freight charge. If outside of warranty period, you need to pay for the parts and the freight charge as well.
- (5) The warranty does not cover consumable parts, such as light lamp or glass door and so on

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