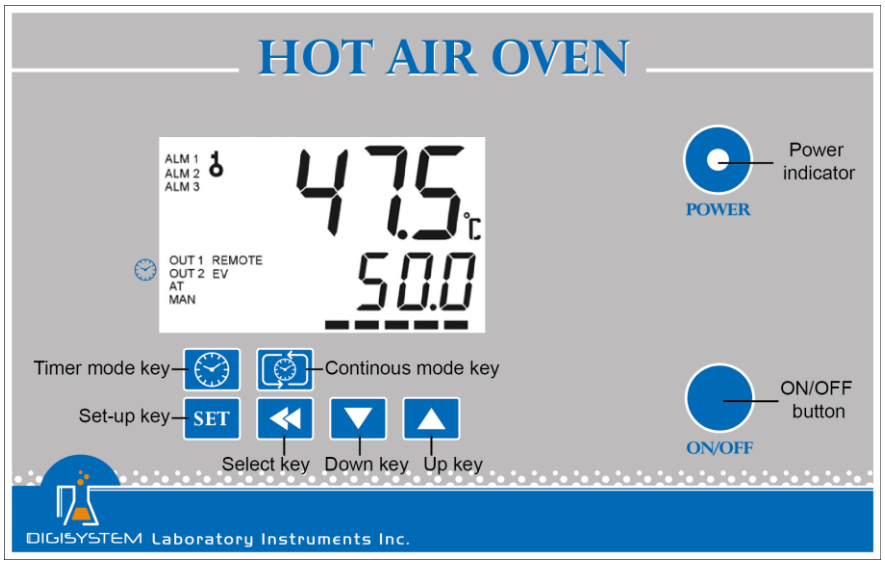
INSTRUCTION MANUAL FOR HOT AIR OVEN DSO-D & DSO-DF SERIES





Warnings:

* Make sure that the door is closed well to prevent heat loss and power drain.
* The surface is hot. Do not touch.
* Do not put any objects on the top of the instrument.
* Please keep the environment ventilated.

1. Connect with power supply. Please make sure the power voltage is the same as the voltage shown on the label stuck on the back of machine.
2. Put your sample in and close the door.
3. Press “ON/OFF Button”, then you will see the “Power indicator’ becomes green. Wait for about 5 seconds; you can see that on the display screen, the top row is the present temperature value (PV) and the bottom row is the setting temperature value (SV).

4. **Set temperature**: you will see 475 (PV) / 500 (SV). Press ▼ or ▲ to adjust SV value and then press **SET** to enter the value.

5. **Set time:** Select time mode: Continouos mode or Timer mode .

   5.1 **Press to set Continuous mode. OUT2** indicator on display screen will disappear. The setting is finished. Go to Step 6.

   5.2 **Press to set Timer mode. OUT2** indicator on screen will appear.

   5.2.1 You will see TIME MIN or TIME HR.

   5.2.2 Use ▲ or ▼ key to select time unit HR (hour) or MIN (minute). Press **SET** to enter the value. Press ◀◀ to next setting.

5.2.3 You will see  . Use ▲ or ▼ key to adjust the time value. Press **SET** to enter the value. Press ◀◀ to next setting.

5.2.4 You will see  . Press ◀◀ and you will see  . The setting is finished.

Remark: If you want to interrupt the timer mode, you can press  to be continuous mode.

6. After finishing the work, please press "ON/OFF Button" to turn off the power, and then the "Power indicator' becomes red.

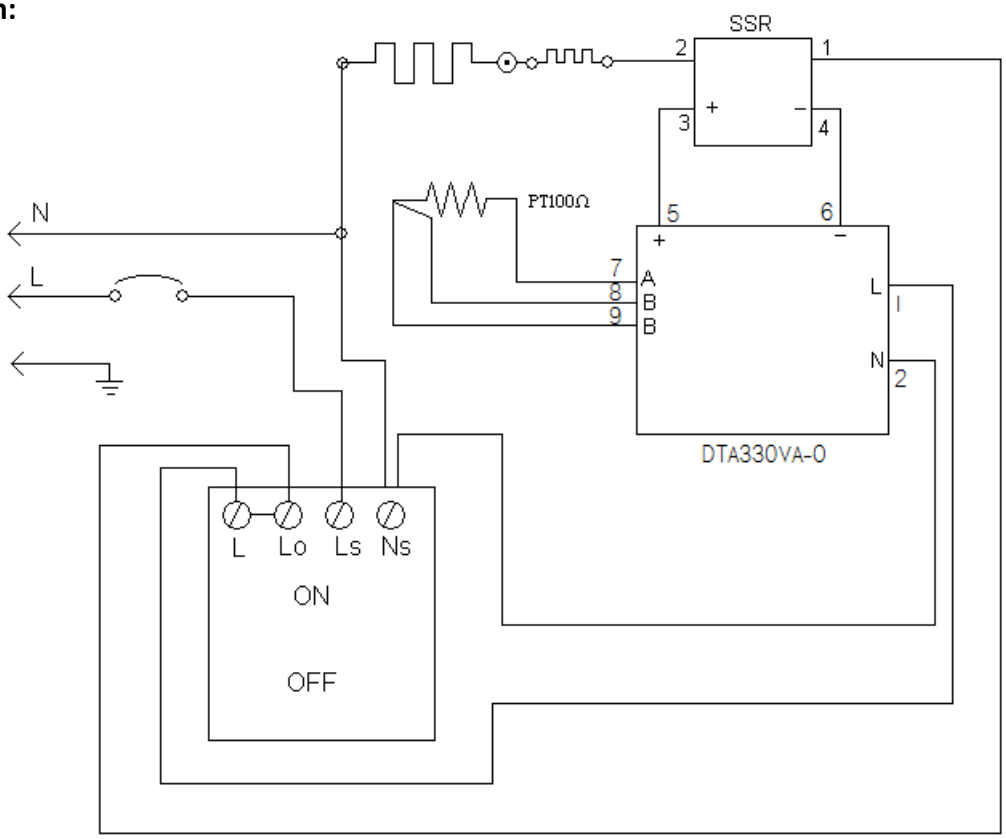
Remark:

1. When the "OUT1" indicator on the display screen is sparkling, it means that the instrument is heating.
2. After the PV value reaches to SV value and tends to be stable, the "ALM1" indicator lamp will appear if the PV value exceeds the SV value by setting point (10℃). In this situation, please turn the power off, open the door and wait for about 30 minutes, and then restart it.
3. If you feel the PV value is much higher or lower than the SV value, you can adjust the "Air vent" on the back of machine to balance the temperature. That is, if the PV value is too high, you can open the "Air vent"; if the PV value is too low, you can close the "Air vent".

Maintenance and care:

Keep the machine clean all the time, so no routine maintenance is required. Cleaning can be done with a damp cloth. Avoid the use of solvents as they may damage the product housing and inner chamber.

Circuit Diagram:



Other functions:

Note: Before executing other functions , please make sure that the continuous mode is selected.

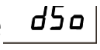
If you see OUT2 indicator on the screen, please press  to set Continouos mode.

1. Other functions include **PV shift (offset) value**, **setting alarm point**, **setting temperature unit**, **auto tuning function**.

Action	Display (Initial value)	Explanation	Adjustment
Press ◀◀	PVoF (0)	**PV shift (offset) value**. If PV value is not correct, you can use this function to calibrate by your own thermometer.	Press ▲ or ▼ to adjust the value. Then press SET to enter the value. If you want to go back to PV/SV display, press SET again.
Press ◀◀	AL1H (10)	**Upper-limit point for alarm.** When the difference between PV and SV is over upper-limit, the alarm indicator (ALM1) on display screen will be flashing.	
Press ◀◀	AL1L (10)	**Lower-limit point for alarm.** When the difference between SV and PV is over upper-limit, the alarm indicator (ALM1) on display screen will be flashing.	
Press ◀◀	tPUN (C)	**Temperature unit.** C or F.	
Press ◀◀	AT (OFF)	**Auto-tuning function.** When auto-tuning function is on, the "AT" indicator" on display screen is flashing. When the function is off, the light of the "AT" indicator" is extinguish.	

2. Restore default value:

2.1 Press  more than 3 seconds, and then you will see  。

2.2 Press ▼ and then press ▲ , you will see  is flashing. Please press SET to enter the value. Then the default value is restored.

Service Manual

Troubleshooting Guide

Caution: *Always disconnect the power cord before troubleshooting.*

Trouble	Cause	Remedy
Instrument inoperative	Power cord not connected to outlet.	Plug instrument in.
	Dead power output.	Change to different output.
	No fuse Breaker is off	Press the breaker back of the machine, and check if the current is overload.
	Electronic element broken	Contact your distributor for repair.
	Power switch is broken	Contact your distributor for repair.
Controller can't control the temperature	Sensor is broken	Contact your distributor for repair.
	Controller	Contact your distributor for repair.
	Heater is broken	Contact your distributor for repair.
Temperature is not stable	The initial setting value is not suitable for the ambient air temperature where the machine is located	Refer to the other functions, execute the Auto-tuning function.
PV value is not correct	User's calibration thermometer is different from the factory's calibration thermometer	Refer to the other functions, execute the function for PV shift (offset) value.