Models: 601/3 – 601/5 – 601/12 – 601/19

Nahita Thermostatic Water Baths

User's Manual





DOMINIQUE DUTSCHER SAS

Version 1, May 2020

PRODUCT DESCRIPTION

Electric heating constant temperature water 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 water-trough 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 water, 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 water bath shall be placed on a stable platform.
2.Add water to 50mm above the clapboard before use.
3.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.
4.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.
5.Refer to the instructions of temperature controller for digital temperature controller and intelligent temperature controller.
6.After the set temperature is reached and it is automatically put under a constant temperature for half an hour, it will be put in the sample tube. The experiment is completed. Then, close the power switch and take out the sample tube.

SAFETY PRECAUTIONS

1.The power supply must be in line with the voltage required by the product. The power socket shall be a three-hole socket. Favorable grounding protection must be provided.
2.During water filling, do not let the water flow in the control cabinet to prevent electric leakage.
3.Before use, add water 50mm until the water reaches above the clapboard before use first. Then connect to power supply and heat. It is not allowed to heat with insufficient water.
4.During use, do not touch the heating pipe by your hands to avoid being scalded.
5.After use, timely discharge the water, dry it and keep it clean in order to extend the service life.

DOMINIQUE DUTSCHER SAS

TECHNICAL PARAMETERS

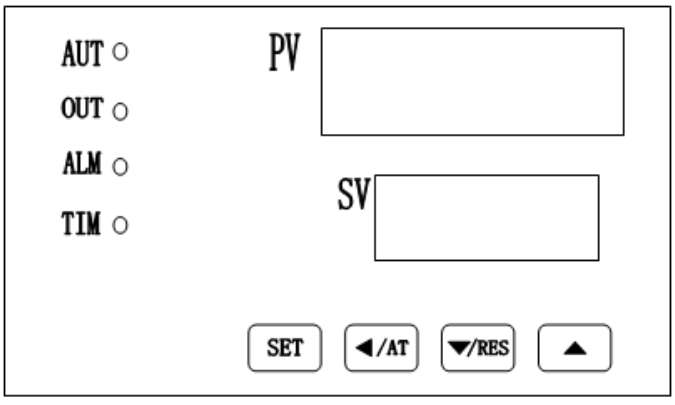
Model - Code	601/3 – JDD001	601/5 – JDD002	601/12-JDD003	601/19-JDD004
Controller	PID			
Voltage	220V/50Hz 110V/60Hz			
Power(W)	300W	600W	800W	1200W
Tem-range(℃)	RT.+5～100℃			
Temperature resolution	0.1°C			
Temperature fluctuation	≤±0.5°C			
Division accuracy	≤±1°C			
Timer	Continuous mode / 9999 minutes			
Safety	Overcurrent protection; Over temperature alarm; Prevent dry burning function			
Chamber capacity (L)	3	6	12	18
Chamber size (mm)	160x160x130	305x160x130	305x305x130	470x305x130
Product size (mm)	200x200x220	345x200x220	345x345x220	510x345x220
Packing size (mm)	250x250x270	400x250x270	400x400x270	550x400x270
N.W/G.W	3 kg/3.5 kg	4 kg/5 kg	6 kg/7 kg	8 kg/9 kg

※ **OPERATION INSTRUCTION**

1. Main technical parameters

1) Power：220V or 110V ± 10％ .. AC (Only one voltage can be selected according to the type of instrument)，50~60Hz
2) Environmental temperature：-10～60℃
3) Relative Humidity：< 90%RH，No moisture condensation
4) Temperature sensor：NTC(3950) thermal resistance
5) Range of set temperature：0～100.0℃
6) Range of measure temperature：-15～115.0℃
7) Range of time：0 ～ 9999 minutes
8) Temperature measurement error：< 0.5%

2. Panel Instructions



DOMINIQUE DUTSCHER SAS

2-1. 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.

2-2. 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.

3. Operation and using

3-1. 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.

3-2. 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.

DOMINIQUE DUTSCHER SAS

When the time is set to "0000", 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 .

3-3. 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.

3-4. 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.

3-5. When the buzzer sounds, press any key to mute.

3-6. Dry Heating Protector



Hand Reset

When the water bath lack water, the independent dry heating protector will cause the machine power off.

After adding water , take off the red knob, press the protection button for using again.

4. 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

DOMINIQUE DUTSCHER SAS

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.

5. 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

DOMINIQUE DUTSCHER SAS

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

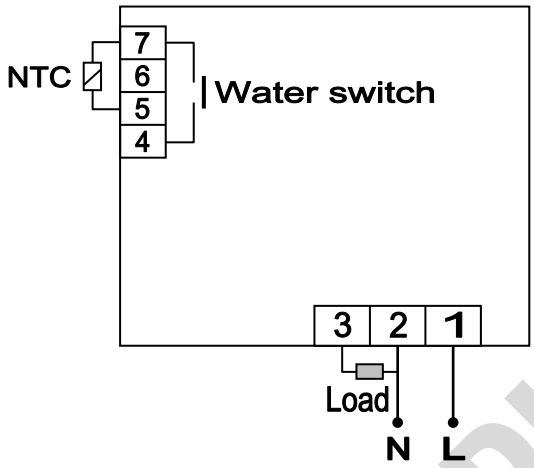
Prompt	Name	Function description	(Setting range) Factory value
Lc-	Password key	When "Lc=9", enter the next parameters.	0
doT	Temperature decimal	0: No decimal point display 1: With decimal point display	(0～1) 1
ndT	Timer mode	0: No timer function. 1: Start timing when the temp reaches the set value. 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	(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

DOMINIQUE PUTSCHER SAS

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

6. Wiring



※ **Common Failures and Troubleshooting**

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 water temperature. The heating pipe is burnt.	Replace the instrument. Replace the sensor. Reset the temperature. Replace the heating pipe.
The difference between displayed temperature and actual temperature is too big.	The temperature control instrument is broken. The temperature sensor is broken.	Replace the temperature control instrument. Replace the temperature sensor.

DOMINIQUE DUTSCHER SAS

※ **Storage and Transport**

1.This product shall be stored in a cool and dry environment with the temperature of -20℃～+40℃.

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

※ **Packing list**

1.Main machine x1 pc

2.Power cable x1 pc

3.Stainless steel lid x1 pc

4.User manual x1 pc

DOMINIQUE DUTSCHER SAS