

PYROTEC RT 1000

OPERATION INSTRUCTIONS

1 Connections

The control unit must firstly be connected to kiln by the HARTING-plug to socket on side of the circuit-box. The plug is a one way connection type and is fixed by clicking the safety-bow.

2 Power switch

The power switch is situated on the left wall of control unit housing. After turning on, the actual temperature in kiln is displayed on the digital display.

If no display appears, please check:

- a) if power cable of kiln is correctly connected
- b) if fuses are o.k.
- c) if connection control unit to kiln is o.k.

3 Explanation of features

There are eighteen keys to programm the RT 1000 on the frontside of the case.

key name:	function:	unit:
"Startverzög."	set program start delay minutes	
"Anheizzeit"	set ramp time	minutes
"Anheiztemp."	set ramp temperature	°C
"Endtemp."	set soak temperature	°C
"Haltezeit"	set soak time	minutes
"Programm speichern"	save program	
"Programm"	choose fixed program	
"1", "2", ..., "0"	enter numerical values	
"START"	start program	

3.1 Delay start function

If the key "STARTVERZÖG." is pressed, a delay in the program start can be obtained through the number keys. If a program start delay is programmed, the display will show, after pressing the "START" key, the remaining delayed time in minutes. When the delay time has run out, the RT 1000 willstart by itself and the actual temperature is displayed.

3.2 Using fixed programs

The controller RT 1000 is provided with 4 fixed programs. To use one of these programs, please push the "PROGRAM" key and then enter the desired program number by means of the number keys. Pressing "START" key ends information input and starts the chosen program.

The following fixed programs are available:

Program:	Nr:	ramp	ramp time:	soak temperature:	soak time:
DRYING	1	480 min	120 °C	60 min	120 °C
SLOW BISCUIT	2	360 min	650 °C	10 min	900 °C
NORMAL BISCUIT	3	240 min	650 °C	10 min	900 °C
GLAZE 1050°C	4	120 min	450 °C	20 min	1050 °C

Example:

To operate the kiln using program "GLAZE 1050°C" you have to

- 1) push "PROGRAM" key ----> display will show "P = "
- 2) push " 4 " key ----> display will show "P = 4 "
- 3) push "START" key ----> display shows actual kiln temperature, indicator "t₁" lights up, kiln operates according to program Nr. 4 (GLAZE 1050 °C) !

3.3 Adjustment of fixed programs

When there is a need to adjust a value from a fixed program, please follow these steps:

1. choose your fixed program
2. press key of your choice to adjust;
the following keys are available:
 - "Startverzög."
 - "Anheizzeit"
 - "Anheiztemp."
 - "Endtemp."
 - "Haltezeit"
3. the actual value of this function will be displayed
4. enter your adjusted value with numerical keys
5. press "START" key --> the program with your adjustment has been started!

3.4 Operating without fixed programs

The different temperature- and time-values can also be adjusted without starting a fixed program:
After turning on the power switch just follow these steps:

1. press "Anheizzeit" key, then enter desired ramp time by numerical keys (in minutes)
2. press "Anheiztemp." key, then enter desired ramp temperature by numerical keys (in °C)
3. press "Endtemp." key, then enter desired soak temperature by numerical keys (in °C)
4. press "Haltezeit" key, then enter desired soak time by numerical keys (in minutes)
5. press "START" key ---> your special program has been started!

If you want to save a program of your own to the users fixed memory, follow steps 1 - 4, then press "Programm speichern" key ----> display will show "S= ". Now you can enter your selected program number, you thereby have generated a new fixed program, that you can operate anytime as shown in chapter 3.2!

3.5 Keyboard locking

After pressing "START" key, you may lock the temperature controller RT 1000 by turning the key switch to Position "gesperrt". It is then protected from any adjustment by unauthorized persons.

4 Control indicators

There are 5 indicator lamps showing the actual active phase. During programming or checking values the corresponding indicator blinks at intervals of about 1 second.

5 Checking actual values

To check the values of your actual program just press the selected function key and the correspondent value is displayed, e.g. "Anheizzeit" to check ramp time.

Please remember: After starting the programm, time values are decreasing, display shows always remaining time values !!

Do not forget to press "START" key again to continue program run down!

6 Power-Down feature

All data will be stored until power is switched on again. Then the RT 1000 will work on with the old data.

7 Error messages

The RT 1000 is able to check itself while working. If there is a defect, it will switch off the kiln and display one of the following 7 messages:

"F1":

When your kiln heats up slower than 4 °C per hour during full power stage, the kiln is switched off and error message F1 is displayed.

Possible causes:

- kiln fuses broken
- heating elements broken or too old

"F2":

When your kiln takes longer than 18 hours to heat up during full power stage, the kiln is switched off and error message F2 is displayed.

Possible causes:

- kiln fuses broken
- heating elements broken or too old

"F3":

A defect in the thermocouple will cause a switch off and the error message F3.

Possible causes:

- thermocouple broken
- thermocouple wiring defect

"F4":

This error message is displayed when the thermocouple is wrongly connected.

"F5":

If temperatur input exceeds 1300°C, error message F5 is displayed.

"F6":

F6 will be displayed by a selftest error. Please contact your dealer to get further instructions.

"F7":

If the kiln reaches a temperature 20 °C above the programmed soak temperature and keeps it for at least 256 seconds, error message F7 is displayed. This overheat protection is operated only at temperatures above 700 °C.

8 Technical data

Input:	Thermocouple Type S (Pt/Pt10Rh)
Powerline:	210 - 250 Volt 50/60 Hz
Powerconsumption:	14 VA
Fuse:	0,1 A slow
Output:	relay contact 230 V ac max 4 A
measurement range:	+10 ... +1300 °C
exactness:	0,3 % +/- 1 digit
weight:	1,8 kg
size:	250 x 320 x 100 mm
outside temperature range:	0 °C 50 °C
connecting wire:	1,6 m
plug:	AMP-plug 14 pins
pin connection:	

8	input L1 230 V
9	input N 230 V
7	output L1 switched by mainswitch
13	output L1 coil of contactor
14	output N
1	Thermocouple Type S + side
2	Thermocouple Type S -- side

Input-restrictions:

Temperature range:	0 +1300 °C adjustable in steps of 1 °C
Time range:	0 9999 min adjustable in steps of 1 min