

OPERATING INTRUCTIONS FOR THE SAFEFIRE 3000 CONTROLLER

1. CONNECTIONS:-

For the operation of the temperature control system SAFEFIRE 3000 the appropriate plug contact must be connected to the switch box of the kiln, through this plug contact the temperature control system is provided with 24v low voltage. At the same time the contact to the thermocouple element is achieved.

2. SWITCH:-

The switch of the temperature control system is situated at the left-hand side of the outside case. When the temperature control system has been turned on, the temperature of the kiln appears on the digital display. If nothing appears on the digital display, please check:

- a) Is the main plug of the kiln plugged in?
- b) Is the kiln turned on?
- c) Check the Fuse.

3. HOW TO PROGRAM SET PROGRAMS:-

The temperature control system SAFEFIRE 3000 is equipped with 5 set programs. To program a set program, one has to press the Key "Program" first. Afterwards the desired program number must be pressed. With the pressing of the "Start" key the application has ended.

For example:- Adjustment of the kiln for a glazed firing of 1050°C.,

Press the key "Program" – the letter P appears on the digital display.

Press the key "4" on the digital display appears P=4

Press the key "Start" – the temperature of the kiln appears on the digital display and the control ramp light is on.

(An index of the stored data for the set programs has been attached to these instructions).

4. CONTROL OF THE STORED PARTICULARS:-

With the keys "Ramp in Min"

"First Set Point"

"Second Set Point"

"Soak in Min"

The actual state of the stored cells can be checked at any time and if necessary, be corrected.

For example: If the temperature control system, as explained in point 3, is laden with program 4 and turned on, the state of the stored cells can be controlled. If the key "Ramp in Min" is pressed, the digital display will show 120.

If the key "First Set Point" is pressed, the digital display will show 450°C. Both these values indicate that the kiln should reach a temperature of 450°C within 120 minutes. After the 120 minute heat-up time, the kiln will continue to function with full heating performance.

If the key “Second Set Point” is pressed, the digital display will show 1050°C. This means that the kiln should reach a temperature of 1050°C.

If the key “Soak in Min” is pressed, the digital display will show 10, meaning that the kiln should hold its firing temperature for 10 minutes.

BRIEF INSTRUCTIONS FOR THE CONTROL SYSTEM SAFEFIRE 3000

(It is advisable to have these instructions easily visible beside the instrument).

1. Turn main switch (1). The control light (7) does not go on, the digital display (2) indicates the temperature of the kiln.
2. Lock the keyboards lock (3) with the key. After having selected the program and pressed the ‘Start’ key (5), the lock can again be barred to prevent any adjustment from unauthorised persons.
3. Select set program (4) by pressing the key program, the numbers 1 – 5, or give in freely selected program by the program key (6) and the number keys.
4. Press “Start” key (5).
5. The control lights (7) mark the individual steps of the burning process.



A control of the stored particulars is at any time possible. If a control is carried out during the course of a program, the firing process will be interrupted, however, when the key “start” is pressed, the programme continues.

NOTICE: If a time control is made during the course of a program, the remaining time is shown on the digital display.

5. CHANGES IN THE STORED CELLS:-

Changes in stored cells are brought about in a similar way to the control of stored cells. By pressing the appropriate number keys, the stored cell contents are simply transferred. The stored cell contents are cancelled are cancelled by pressing the key “0” a few times.

For example: If the temperature control system is laden with the program “4”, and the key “Second Set Point” is pressed, the firing temperature of 1050°C appears on the digital display. By pressing the number keys this value (temperature) can be changed e.g. 1060°C. After pressing the “Start” key, the new value of 1060°C is accepted as the new firing temperature.

6. FREELY SELECTED PROGRAMS:-

A firing program can, individually, follow without having pressed the program key. In such a case, the stored cells for the

“Ramp in Min”

“First Set Point”

“Second Set Point”

“Soak in Min”

..... must be thoroughly described.

7. HOW TO PROGRAM A PROGRAM START DELAY:-

If the key “Program Start in Min” is pressed, a delay in the program start can be obtained through the number keys. If a program start delay is programmed, the digital display will show, after pressing the key “Start”, the remaining delayed time. When the delay time has run out, the temperature control system will start by itself and the temperature of the kiln is indicated.

8. CONTROL LIGHTS:-

The exact phase at which the temperature control system is, can be read on the control lights. During programming, the corresponding control lights blink at intervals of about one second.

9. KEYBOARD LOCKING:-

After pressing the key “Start”, the keyboard of the temperature control system can be locked with a key switch. It is then protected from any adjustment by unauthorized persons.

10. MAXIMUM DATA INTAKE:-

Program Start	9999 Min.
Ramp In Min	700 Min.
First Set Point	1300°C.
Second Set Point	1300°C.
Soak In Min	700 Min.

EXPLANATION OF THE FAULT INDICATION FOR THE TEMPERATURE CONTROL SYSTEM SAFEFIRE 3000

F.1) Kiln does not follow:-

During the phase “full heating” a check is made every 15 minutes whether the temperature in the kiln has risen. If there has been no rise in temperature, the kiln is turned off and the sign F.1 appears on the digital display.

Possible reason for the fault of F.1 – Fuse blown, heating element broken, door contact switch opened.

F.2) Maximum Firing time Exceeded:-

During the phase “full heating” the time is measured. If this time exceeds the value of 12 hours, the kiln is turned off and the sign F.2 appears on the digital display.

Possible reasons for the fault of F.2 – Element – Broken.

F.3) Thermocouple Defect:-

The sign F.3 appears on the digital display when the thermocouple is faulty.

Possible reasons for the fault of F.3 – Thermocouple is broken, Thermocouple element wrongly attached.

F.4) Putting in the Wrong Temperature:-

If a higher temperature than 1300°C is put in, the sign F.4 appears on the digital display.

F.5) Putting in the Wrong Time:-

The time on is checked by the control system. If very long times are selected for “Ramp” or “Soak”, the sign F.5 appears. Adjustable maximum time on 700 min.

F.6) Self Test:-

If the control system is defective, the sign F.6 appears on the digital display.

INSTRUCTIONS FOR ENTERING OWN PROGRAMS INTO SAFEFIRE 3000 CONTROLLER

- (1) Switch on supply to kiln and controller and “unlock” controls.
- (2) Using the top set of six programmed adjustment keys, select each stage in turn and enter required values on lower set of twelve keys as follows.
 - (a) Press delay start key and enter delay in minutes – if not required delay enter zero.
 - (b) Press ramp key and enter time in minutes required to reach first set point.
 - (c) Press first set point key and enter required temperature.
 - (d) Press second set point and enter required final temperature.
 - (e) Press soak key and enter required soak time in minutes. If no soak required enter zero.

If full power is required for the full firing time omit stages b and c or enter zero.

- (3) Press Set programme key.
- (4) Select programme i.e. press programme key, select programme, press start key.

To review or alter any programme entered:-

Select stage require to review or alter on programme adjustment keys.

Value entered in programme will now be displayed. If a change of this value is required press zero key several times until reading is cancelled enter new value.

Repeat above to review / alter other values. Press start key to continue programme.



BUILT IN PROGRAMME DATA

Programme	Ramp	First Set point	Second Set Point	Soak
1) /	Your Programme	/	/	/
2) Slow Biscuit	480 Min	650°C	960°C	20 Mins
3) Normal Biscuit	250 Min	650°C	960°C	20 Mins
4) Earthenware Glaze	120 Min	450°C	1050°C	10 Mins
5) Stoneware Glaze	120 Min	450°C	1260°C	10 Mins