

HD001455.TIF

© ELECTROLUX ZANUSSI S.p.A.
Corso Lino Zanussi,30
I - 33080 PORCIA /PN (ITALY)
Tel +39 0434 394850
Fax +39 0434 394096

Publication No.

599 34 74-39

IT/SERVICE/FV

**Electronic Programmer
S.E.T.
(Simple Electronic Timer)**

TSE-P

Edition: 06.2001

CONTENTS

- ESD – Electrostatic discharge-----	page	4
- Control system -----	page	5
- Functions -----	page	5
- Technical features-----	page	6
- Programmer supply table-----	page	7
- Setting the programmer-----	page	8
- Setting the time of day -----	page	8
- Manual cooking-----	page	8
- “Duration time” function-----	page	9
- “End-of-cooking” function -----	page	10
- Combined “Duration time” and “End-of-cooking” functions-----	page	11
- “Minute minder” function -----	page	11
- Display switching off function-----	page	12

ESD – ELECTROSTATIC DISCHARGE

Electrostatic Discharge = Electrostatic discharge and its effect on the oven components

The interface of the control unit does not feature an internal protection against electrostatic discharge (multiple connectors – refer to drawings on pp. 8 and 12). When carrying out repairs or maintenance, the service engineer must therefore ensure that the potential of the oven casing is stabilized (discharge any electrostatic charge by touching the oven casing) in order to neutralize any possible overload and to avoid damaging the control unit. The same applies to control units supplied as spare parts (i.e. before fitting them to the oven), which must be removed from their ESD protective bag only after their potential has been stabilized (by discharging any static electricity).

Important: The theories relative to the charge/discharge process are not discussed in this Manual, since the tangible effects are considered to be of greater importance. These effects may be felt at any time whenever, touching the handle of the oven, its potential is stabilized (electrostatic discharge).

What happens when the potential of semiconductor components (components on a PCB such as integrated circuits, microprocessors etc.) is stabilized?

Stabilization of the potential takes place in the internal structure of the component. This does not mean that the component is necessarily damaged immediately; greater damage is caused by faults that develop later due to damage to internal connections. This type of fault develops only when overheating or current overloads occur.

On the one hand, almost all sensitive semiconductor components (e.g. MOS circuits) have been improved by the introduction of protective devices; on the other hand, the internal structure of these components is today far smaller than 10 years ago, which increases their sensitivity.

Important!

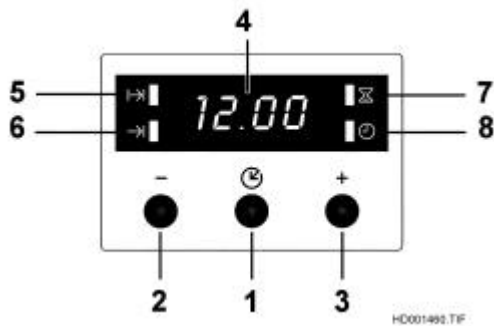
Which components may be damaged by static electricity during repairs?

All boards which feature control and command access devices (door switches, food probes etc.), unprotected tracks and microprocessors, or freely-accessed integrated circuits.






Examples:

- Programming units with access to the food probe and the door switch.
- Programming units whose control processors are accessible (for reasons of cost, these are only partially protected).
- W.O.E.C. control unit
- S.O.E.C. control unit
- C.H.E.C. control unit

CONTROL SYSTEM



Pic. 1

- 1 - SELECTOR BUTTON 
- 2 - DECREMENT BUTTON “ - ”
- 3 - INCREMENT BUTTON “ + ”
- 4 - DISPLAY
- 5 - DURATION TIME BUTTON 
- 6 - END-OF-COOKING INDIC. 
- 7 - MINUTE-MINDER INDIC. 
- 8 - TIME OF DAY INDIC. 



FUNCTIONS CONTROLLED BY THE SELECTOR (1)



Cooking time indication.



End-of-cooking indication.



Minute-minder indication.



Time indication.

In this programmer the time of day, the cooking times and the end-of-cooking times and the minute-minder times are shown on a display.

The various functions are set by means of a button that, in sequence enables to select the desired function.

The selected function is shown by the switching on of the LED in correspondence with the relative symbol.

If there is no function selected (all indicating LEDs are off) the oven functions manually because in this case the internal relay of the programmer keeps its contacts closed.

FUNCTIONS

This type of S.E.T. programmer (Simple Electronic Timer) fitted into an oven or cooker enables to have different cooking functions.

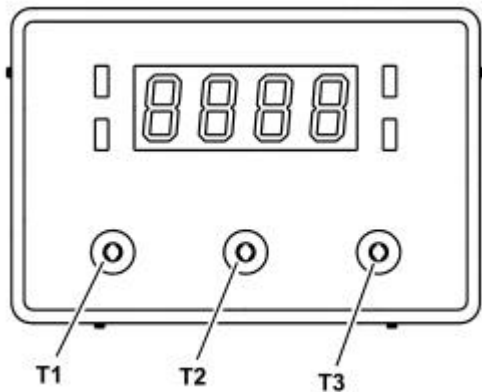
By setting properly the programmer it is possible to switch the appliance on and off with different criteria as indicated in chapter “Setting the programmer”

The major functions of this programmer are:

- Indication of the time by means of a digital display.
- Indication of cooking functions on a display.
- Semi-automatic cooking function by setting a cooking time.
- Semi-automatic cooking function by setting an end-of-cooking time.
- Automatic cooking function by combining an end-of-cooking time with a duration time.
- Minute-minder function.
- Display switching off function.

TECHNICAL FEATURES

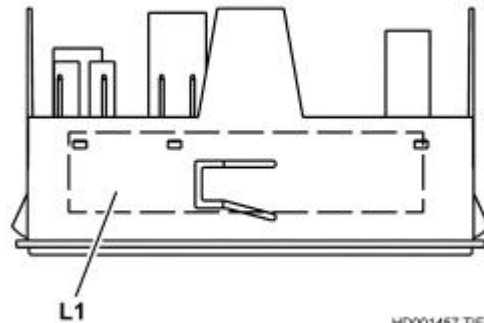
Indication:		Display with red LED, height 14 mm
Time of day:	Regulation field	0,0 ... 24,00 hours Sound indication (2 impulses / 2 seconds)
Minute-minder:	Regulation field End-of-operating indication	0,0 ... 2,30 ore Sound indication (2 impulses / 2 seconds)
Duration time	Regulation field End-of-operating indication	0,0 ... 10,00 ore Sound indication (2 impulses / 2 seconds)
End-of-cooking	Regulation field End-of-operating indication	Max. 23 hours and 59 minutes Sound indication (2 impulses / 2 seconds)
Room temperature		+20°C ... +85°C (330174001-02-03) +20°C ... +105°C (330174004-05)



HD001456.TIF

Pic. 2

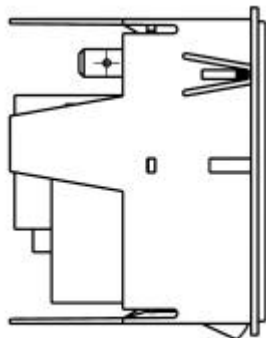
T1 – DECREMENT BUTTON
T2 – FUNCTIONS BUTTON
T3 – INCREMENT BUTTON



HD001457.TIF

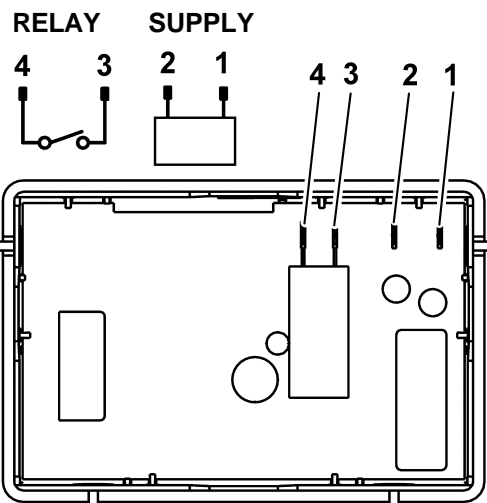
Pic. 3

L1 – see table page 7



HD001458.TIF

Pic. 5



HD001459.TIF


Pic. 6

PROGRAMMER SUPPLY TABLE


Code (see Pic. 3 position L1)	Power		Internal relay		Max. temperature
	Voltage	Frequency	Current	Voltage	
330 17 40 01	230 V	50 Hz	16 A 10 A	250 VAC 400 VAC	85 °C
330 17 40 02	230 V	50 Hz	0,1 mA	5 VDC	85 °C
330 17 40 03	230 V	60 Hz	16 A 10 A	250 VAC 400 VAC	85 °C
330 17 40 04	230 V	50 Hz	16 A 10 A	250 VAC 400 VAC	105 °C
330 17 40 05	230 V	50 Hz	0,1 mA	5 VDC	105 °C

SETTING THE PROGRAMMER




Setting the time of day

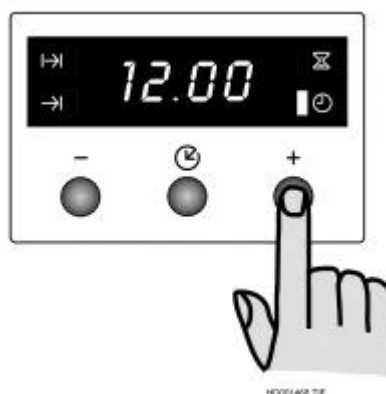
When the oven is connected for the first time or after a black-out, the LED "Time of day"  flashes.

To set the time of day:

- 1 – Press buttons "**+**" or "**-**".
- 2 – When the correct setting shows up, wait 5 seconds: the LED "Time of day"  will switch off and the display will indicate the set time.

To change the time:

- 1 - Press repeatedly the button  to select the function "Time of day". The corresponding LED starts flashing. Then proceed as above described. The time can be changed only if no automatic functions have been set. ("Duration"  or "End" ).

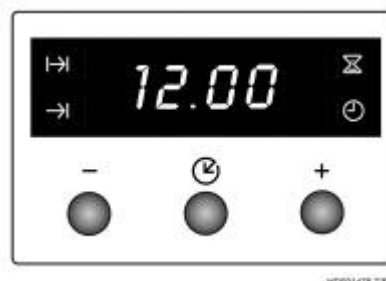


Pic. 7

Manual cooking



When the appliance is switched on if no cooking function is selected on the programmer, the indicating LEDs are off, the contacts of the internal relay are closed and so it is possible to select a manual cooking.

Note: During manual cooking it is possible to use function "Minute-minder"




Pic. 8

“Duration time” function

It is possible to start immediately the cooking and programme automatically the duration time. Press repeatedly button  to select the function “Duration time”. The corresponding LED  starts flashing. Then proceed as follows:

To set the duration time:

- 1 - Press buttons “+” or “-”.
- 2 - When the desired duration time shows up, wait 5 seconds: the LED “Duration time”  will be on and the display will indicate the time of day.
- 3 - At the end of the set time, the LED will start flashing, the oven will switch off automatically and the buzzer will sound.



Turn the oven knob and the thermostat knob to zero.

To interrupt the buzzer press any button.

Attention!

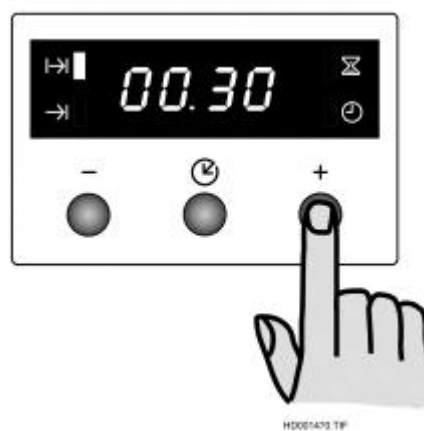
With this operation, the oven function is reset automatically (see manual cooking): therefore, at the end of the cooking, remember to turn the selector knob and the thermostat knob into position zero.

To cancel cooking time:

- 1 - Press repeatedly button  to select the function “Duration time”. The corresponding LED  flashes and the display will indicate the remaining time.
- 2 - Press button “-” till the display shows “0.00”. After 5 seconds the LED will switch off and the display will indicate the time of day.





Pic. 9




Pic. 10

“End-of-cooking” function →

It is possible to start immediately the cooking and programme automatically the end-of-cooking. Press repeatedly button  to select the function “End-of-cooking”. The corresponding LED  starts flashing. Then, proceed as follows:

To set the end-of-cooking:



- 1 - Press buttons “+” or “-”.
- 2 - When the desired end-of-cooking shows up, wait 5 seconds: the LED “End-of-cooking”  will stay on and the display will indicate the time of day.
- 3 - At the end of the set time, the LED will start flashing, the oven will switch off automatically and the buzzer will sound. Turn the oven knob and thermostat knob into position zero.

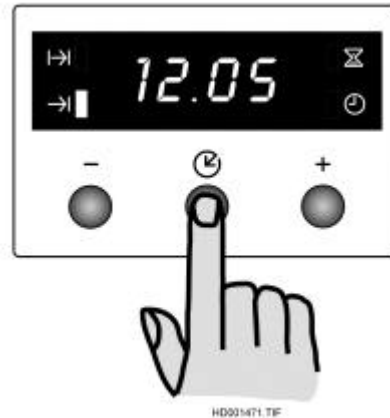
To interrupt the buzzer press any button.

Important!

With this operation, the oven function will reset automatically (see manual cooking): therefore, at the end of cooking, remember to turn the functions selector knob and thermostat knob into position zero.

To cancel end-of-cooking:

- 1 - Press repeatedly button  to select the function “End of cooking”. The corresponding LED  flashes and the display will indicate the set end-of-cooking.
- 2 - Press button “-” till the display shows the time of day. The buzzer will sound and the LED will switch off.






Pic. 11



Pic. 12

Combined “Duration” and “End-of-cooking” functions




The functions “Duration time” and “End-of-cooking” can be used together to switch the oven on and off automatically later.

- 1 - With the function “Duration time”  (proceed as described in the paragraph “Function Duration time”), set the cooking time. Then, press button : the display will show the time just set.
- 2 - With the function “End-of-cooking”  (proceed as described in the paragraph “Function End-of-cooking”) set the desired end-of-cooking.
The corresponding LEDs are on and the display shows the time of day.
The oven will switch on and off automatically according to the set times.



Function “Minute-minder”

The minute-minder sounds at the end of the set time, but **it does not interrupt the cooking.**

To set the minute-minder:

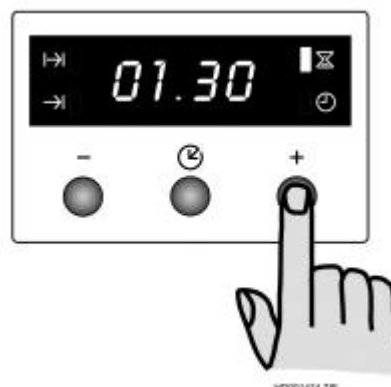
- 1 - Press repeatedly button  to select the function “Minute-minder”.
The corresponding LED  will start flashing.
- 2 - Then, using buttons “+” or “-” (max. time: 2 hours and 30 minutes).
- 3 - When the correct set shows up, wait 5 seconds: the indicating LED “Minute-minder”  will stay on.
- 4 - At the end of the set time, the LED will start flashing and the buzzer will sound. To interrupt the buzzer press any button.

To cancel the minute-minder setting:

- 1 - Press repeatedly button  to select the function “Minute-minder”.
The corresponding LED  will flash and the display will indicate the remaining time.
- 2 - Press button “-” till the display shows “0:00”. After 5 seconds the LED will switch off and the display will indicate the time of day.



Pic. 13



Pic. 14

Display switch off function

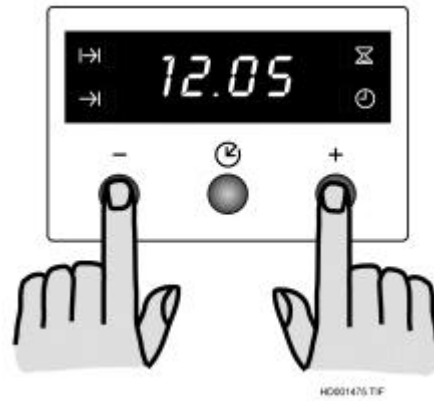
When no cooking functions are set (only time of day) it is possible to switch off the display.

To switch off the display:

1 - Keep pressed simultaneously two or three buttons for about 5 seconds. The display will switch off.

2 - To switch on the display again, press any button.

Note: the display can be switched off only if no other functions are set.



Pic. 15