


EV9323 Digital controller with 3 outputs for electric bread ovens, with cooking timer and rapid heating functions version 3.00

E ENGLISH

1 IMPORTANT

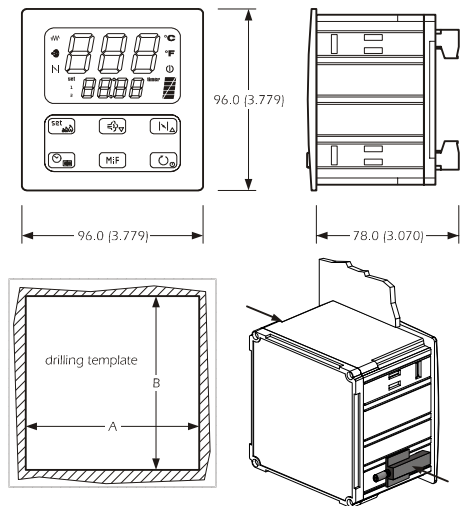
1.1 Important

Read these instructions carefully before installation and use and follow all warnings regarding installation and for the electric connection. Keep these instructions with the instrument for future reference.

 The instrument must be disposed of in compliance with local Standards relative to the collection of electrical and electronic appliances.

1.2 Dimensions and installation

Panel with supplied brackets with screws; dimensions in mm (in).



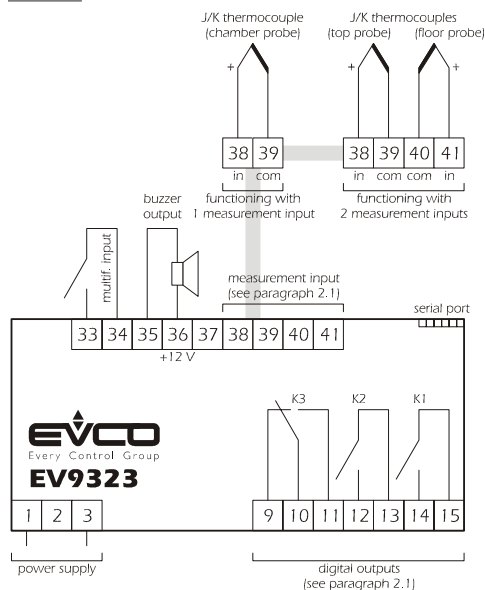
DIMENS.	MINIMUM	TYPICAL	MAXIMUM
A	92.0 (3.622)	92.0 (3.622)	92.8 (3.653)
B	92.0 (3.622)	92.0 (3.622)	92.8 (3.653)

Installation recommendations:

- the thickness of the panel must not exceed 4.0 mm (0.157 in)
- position the brackets as indicated in the drawing in this paragraph, moderate the coupling torque
- make sure that the working conditions (temperature of use, humidity, etc.) lie within the limits indicated in the technical data
- do not install the instrument in proximity of heat sources (resistances, hot air pipes, etc.), appliances with strong magnets (large diffusers, etc.), places subject to direct sunlight, rain, humidity, excessive dust, mechanical vibrations or jerks
- in compliance with Safety Standards, protection against any contact with electrical parts must be assured via correct installation of the instrument. All parts that ensure protection must be fixed in a way that they cannot be removed without the aid of a tool.

1.3 Electric connection

With reference to the wiring diagram, the serial port is the port for the communication with the supervising system (through a serial interface, via TTL, with MODBUS communication protocol) or with the programming key; the port must not be used for two purposes at the same time.



Recommendations for the electric connection:

- do not operate on the terminal boards using electric or pneumatic screwdrivers
- if the instrument has been taken from a cold place to a hot place, the humidity could condense inside; wait for about one hour before applying power
- check that the power supply voltage, the frequency and the electric operational power of the instrument correspond with those of the local power supply
- disconnect the power supply before performing any type of maintenance
- supply the probes with protection able to isolate them from any contact with metal parts or use isolated probes
- do not use the instrument as a safety device
- for repairs and information regarding the instrument, contact the Evco sales network.

2 PRELIMINARY CONSIDERATIONS

2.1 Preliminary considerations

The instrument can be configured to function with 1 measurement input (chamber probe) or with 2 measurement inputs (top probe and floor probe).

Functioning with 1 measurement input allows to independently set the power distributed to the top to that distributed to the floor. Functioning with 2 measurement inputs allows to independently set the top and floor work temperatures.

In both cases it is possible to select the utilities managed by the digital outputs (i.e. relays K1, K2 and K3) among a series of 2 combinations (instrument codes 1 and 2); a third combination (instrument code 0) allows to set the utility managed by each output independently.

INSTR. CODE	RELAY K1 UTILITY	RELAY K2 UTILITY	RELAY K3 UTILITY
0	can be set (top default)	can be set (floor default)	can be set (default steam injection)
1	top	floor	airhole
2	top	floor	chamber light

To set the type of functioning (with 1 measurement input rather than 2) see paragraph 4.1.

To set the instrument code, see paragraph 4.2. Finally, to set the utility managed by each output, see paragraph 4.3.

2.2 Management of the utilities

Top.

If functioning with 1 measurement input:

- the output is switched on in cyclical mode, preferably when the floor output is off (the parameter c1 establishes the cycle time. The procedure given in paragraph 4.5 can be used to set the duration of output switch-on, intended as a percentage of the time established with parameter c1)
- the cyclical activity is subject to the chamber temperature (chamber probe), to the work set-point and parameter r0.

If functioning with 2 measurement inputs:

- the output activity depends mainly on the top temperature (top probe), the top set-point and parameter r0.

Floor.

If functioning with 1 measurement input:

- the output is switched on in cyclical mode, preferably when the top output is off (the parameter c1 establishes the cycle time. The procedure given in paragraph 4.5 can be used to set the duration of output switch-on, intended as a percentage of the time established with parameter c1)
- the cyclical activity is subject to the chamber temperature (chamber probe), to the work set-point and parameter r0.

If functioning with 2 measurement inputs:

- the output activity depends mainly on the floor temperature (floor probe), the floor set-point and parameter r6.

Airhole.

The output is activated in the following conditions:

- before the conclusion of the cooking timer count (of the time established with the parameter c5), for the time established with parameter c6
- in manual mode, key for the time established with parameter c7.

Steam injection.

The output activity depends mainly on parameter t0.

Through the multifunction input it is also possible to activate the output in remote mode.

Alarm.

The output is activated during a temperature alarm.

Chamber light.

The output is activated in manual mode.

Through the multifunction input it is also possible to activate the output in remote mode.

Cooking timer.

The output is activated during the cooking timer count.

Acoustics.

The output is activated in the following conditions:

- before the conclusion of the cooking timer count (of the time established with the parameter c9), for the time established with parameter c4
- during an alarm or an error, with continuous contribution.

In spite of the fact that the instrument can manage the 8 utilities stated in this paragraph, there are 3 digital outputs available. Make sure that the desired utility is managed by the instrument (see paragraph 2.1).

3 USER INTERFACE

3.1 Preliminary considerations

The following functioning states exist:

- the "on" state (the instrument is powered and on: the regulators can be on)
- the "stand-by" state (the instrument is powered but switched off via software: the regulators are off)
- the "off" state (the instrument is not powered).


Successively, the term "switch-on" means the passage from the stand-by state to the on state. The term "switch-off" means the passage from the on state to the stand-by state.

When powered, the instrument re-poses the state that it was in when the power supply was disconnected.

3.2 Instrument switch-on/off

To pass from the stand-by state to the on state (and vice versa):

- make sure no procedure is in progress

press  for 1s.

3.3 II display


If functioning with 1 measurement input, if the instrument is in the on state:

- the upper part of the display will show the size established with parameter P5:
 - if P5 = 0, the display will show the chamber temperature
 - if P5 = 1, the display will show the work set-point
- the lower part of the display will show the size established with parameter P6:
 - if P6 = 0, the display will show the chamber temperature
 - if P6 = 1, the display will show the work set-point (in this case the "set" LED will be on)
 - if P6 = 2, the display will show the value of the cooking timer or its count if the timer is active (in this case the "timer" LED will be on); the value of the cooking timer is displayed in the hours:minutes format. See also paragraphs 3.4 and 3.6.



If functioning with 2 measurement inputs, if the instrument is in the on state:

- the upper part of the display will show the size established with parameter P5:
 - if P5 = 0, the display will show the top temperature
 - if P5 = 1, the display will show the top set-point
 - if P5 = 2, the display will show the floor temperature
 - if P5 = 3, the display will show the floor set-point
 - the lower part of the display will show the size established with parameter P6:
 - if P6 = 0, the display will show the top temperature
 - if P6 = 1, the display will show the top set-point (in this case the "set" LED and the "1" LED will be on).
 - if P6 = 2, the display will show the value of the cooking timer or its count if the timer is active (in this case the "timer" LED will be on); the value of the cooking timer is displayed in the hours:minutes format
 - if P6 = 3, the display will show the floor temperature
 - if P6 = 4, the display will show the floor set-point (in this case the "set" LED and the "2" LED will be on).
- See also paragraphs 3.4 and 3.6.

If the instrument is in the stand-by state:

- the upper part of the display will be off
- the lower part of the display will be off
- the LED  will be on.

3.4 Learning the quantity shown by the upper part of the display during the on state



- make sure no procedure is in progress
- press  and : if functioning with 1 measurement input, the upper part of the display will show one of the labels given in the following table for 2 seconds:

LABEL	MEANING
Pb	chamber temperature
SP	work set-point

if functioning with 2 measurement inputs, the upper part of the display will show one of the labels given in the following table for 2 seconds:



LABEL	MEANING
Pb1	temperature of the top
SP1	top set-point
Pb2	temperature of the floor
SP2	floor set-point

3.5 Temporary setting of the quantity shown by the upper part of the display during the on state

- make sure no procedure is in progress
- press  and  for 1s several times: the upper part of the display will show one of the labels given in the tables in paragraph 3.4 for 2 secs, after which it will show the corresponding value.

Any power supply cut-off causes the display of the quantity established with parameter P5 to be restored.

3.6 Learning the quantity shown by the lower part of the display during the on state

- make sure no procedure is in progress
- press  and : if functioning with 1 measurement input, the lower part of the display will show one of the labels given in the following table for 2 seconds:

LABEL	MEANING
Pb	chamber temperature
SP	work set-point
tine	value of the cooking timer or its count if the timer is active

5.4 Interrupting the cooking timer

- press for 1s: the "timer" LED switches off and the buzzer will be activated for 3s.

6 STEAM INJECTION

6.1 Preliminary considerations

The functioning mode of the steam injection depends on parameter t0. If the parameter t0 is set at 0, pressing the key causes the injection of steam for the time established with parameter t2 or for the entire duration that the key is pressed. The parameter t1 establishes the minimum time that can pass between the two successive injections.

If the parameter t0 is set at 1, pressing the key will enable the automatic injection of the steam (in cyclical mode: parameter t2 establishes the duration of the injector switch-on and parameter t1 establishes the duration of switch-off).

Using the multifunction input, it is also possible to cause the same effect caused by pressing the key in remote mode.

If the steam injection is not managed by any digital output, pressing the key will cause the display of the "no" indication for 1s in the lower part of the display.

6.2 Quick setting of the parameter t2

- make sure that the instrument is in on state and that no procedure is in progress
- press and : the upper part of the display will show "t2"; the lower part the corresponding value and the LED will flash.

The parameter t2 can be set between 1 and 250 ds.

If steam injection is not managed by any digital output, the lower part of the display will show "no" for 1s.

- press or within 15s
- press : the LED will switch-off, after which the instrument will exit the procedure.

To exit the procedure in advance:

- do not operate for 15s (any modifications will be saved).

6.3 Activation of the injector in manual mode (only if parameter t0 is set at 0)

- make sure that the instrument is in on state and that no procedure is in progress
- press : the LED will switch-on and the injector will be activated, both for the time established with parameter t2 or for the entire duration that the key is pressed.

The injector must not be deactivated in manual mode.

6.4 Enabling of automatic steam injection (only if parameter t0 is set at 1)

- make sure that the instrument is in on state and that no procedure is in progress
- press : the LED will switch on the injector will be activated in cyclical mode according to that established with parameters t1 and t2 (until the key is pressed again).

7 AIRHOLE

7.1 Preliminary considerations

The airhole is activated in the following conditions

- before the conclusion of the cooking timer count (of the time established with the parameter c5), for the time established with parameter c6
- in manual mode, by pressing the key for the time established with parameter c7.

If the airhole is not managed by any digital output, pressing the key will cause the display of the "no" indication for 1s in the lower part of the display.

7.2 Quick setting of the parameter c7

- make sure that the instrument is in on state and that no procedure is in progress
- press and : the upper part of the display will show "c7"; the lower part the corresponding value; the left part and the LED will flash.

The parameter c7 is visualised in the minutes:seconds format.

To modify the minutes:

- press or within 15s
- press : the right part will flash.

To modify the seconds:

- press or within 15s.

The parameter c7 can be set between 00:00 and 60:00 min:s.

If the airhole is not managed by any digital output, the lower part of the display will show "no" for 1s.

- press : the LED will switch-off, after which the instrument will exit the procedure.

To go back to previous levels:

- press several times during the procedure.

To exit the procedure in advance:

- do not operate for 15s (any modifications will be saved).

7.3 Activation of the airhole in manual mode

- make sure that the instrument is in on state and that no procedure is in progress
- press : the LED will switch on and the airhole will be activated, both for the time established with parameter c7.

7.4 Deactivation of the airhole in manual mode

- make sure no procedure is in progress
- press : the LED will switch-off.

8 RAPID HEATING (only if functioning with 1 measurement input)

8.1 Preliminary considerations

The rapid heating allows to reach the work set-point as quickly as possible, supplying 100% of the power both to the top and the floor (i.e. excluding switch-on of the top and floor outputs in a cyclical way with benefit to switch-on in continuous mode).

When the temperature of the chamber reaches the "work set-point - temperature established with parameter c3" value, the function is interrupted.

8.2 Rapid heating activation

- causes the event established with parameter c2:
 - if c2 = 1, press for 1s (make sure that the instrument is in on state and that no procedure is in progress)
 - if c2 = 2, pass from the stand-by state to the on state
 - if c2 = 3, press for 1s (make sure that the instrument is in on state and that no procedure is in progress) or pass from the stand-by state to the on state.

If parameter c2 is set at 0, the function cannot be activated.

When the function is in progress the upper part of the display shows "F-F" alternately to the quantity established with parameter P5.

8.3 Interruption of rapid heating in manual mode

- make sure no procedure is in progress
- press for 1s.

9 SIGNALS

9.1 Signals

LED	MEANING
	top and floor LED if it is on, the top output and/or the floor output will be on if it flashes, the modification of the work set-point, the top set-point and the floor set-point is in progress (with the procedures indicated in paragraphs 4.4.1 or 4.4.2)
	power distributed to the top LED supplies and indication regarding the power distributed to the top if it flashes, the modification of the power distributed to the top is in progress (with the procedure indicated in paragraph 4.5)
	power distributed to the floor LED supplies and indication regarding the power distributed to the floor if it flashes, the modification of the power distributed to the floor is in progress (with the procedure indicated in paragraph 4.5)
	steam injection LED if it is on: <ul style="list-style-type: none"> and the parameter t0 is set at 0, steam injection will be in progress and the parameter t0 is set at 1, steam injection will be in enabled if it flashes, rapid setting of parameter t2 is in progress (see paragraph 6.2)
	airhole LED if it is on, the airhole will be activated in manual mode if it flashes: <ul style="list-style-type: none"> the airhole will be activated due to the effect of the conclusion of the cooking timer count (parameter c6) rapid setting of parameter c7 is in progress (see paragraph 7.2)
°C	degrees Celsius LED if it is on, the unit of measurement of the temperatures will be degrees Celsius (parameter P2)
°F	degrees Fahrenheit LED if it is on, the unit of measurement of the temperatures will be degrees Fahrenheit (parameter P2)
	on/stand-by LED if it is on, the instrument is in the stand-by state
timer	cooking timer LED if it is on, the quantity shown by the lower part of the display will be the value of the cooking timer or its count if the timer will be activated if it flashes: <ul style="list-style-type: none"> cooking timer setting is in progress the cooking timer count will be in progress but the lower part of the display will be showing another quantity
set	set-point LED if it is on, the quantity shown by the lower part of the display will be the work set-point value, the top set-point and the floor set-point
1	the quantity displayed by the lower part of the display will be the top set-point value
2	the quantity displayed by the lower part of the display will be the floor set-point value

10 INDICATIONS

10.1 Indications

INDICAT.	MEANING
F-F	alternately to the quantity established with parameter P5: the rapid heating function will be in progress (only if functioning with 1 measurement input)
decrease time c9	the time established with parameter c9 is missing... 1 second to the conclusion of the cooking timer count
00:00	flashing: the cooking timer count has ended
no	the function requested is not managed by any digital output

11 ALARMS

11.1 Alarms

CODE	MEANING
AL	chamber temperature alarm (only if functioning with 1 measurement input) Remedies: <ul style="list-style-type: none"> check the chamber temperature see parameters A1 and A3 Consequences: <ul style="list-style-type: none"> the alarm output will be activated the acoustics output and the buzzer output will be activated

AL1	top temperature alarm (only if functioning with 2 measurement inputs) Remedies: <ul style="list-style-type: none"> check the top temperature see parameters A1 and A3 Consequences: <ul style="list-style-type: none"> the alarm output will be activated the acoustics output and the buzzer output will be activated
AL2	floor temperature alarm (only if functioning with 2 measurement inputs) Remedies: <ul style="list-style-type: none"> check the floor temperature see parameters A5 and A7 Consequences: <ul style="list-style-type: none"> the alarm output will be activated the acoustics output and the buzzer output will be activated
PF1	power supply cut-off alarm during the cooking timer count Remedies: <ul style="list-style-type: none"> press a key to restore the normal display check the causes that brought about the power supply cut-off Main consequences: <ul style="list-style-type: none"> on power supply restore, the count will continue with a maximum error of 3 min the acoustics output and the buzzer output will be activated

When the cause of the alarm disappears, the instrument restores normal functioning, except for the power supply cut-off alarm during the cooking timer count (code "PF1") which requires a key to be pressed.

12 INTERNAL DIAGNOSTICS

12.1 Internal diagnostics

CODE	MEANING
Pr1	if functioning with 1 measurement input: chamber probe error Remedies: <ul style="list-style-type: none"> see parameter P0 check probe integrity check the instrument-probe connection check the chamber temperature Main consequences: <ul style="list-style-type: none"> the top output and the floor output will be deactivated the acoustics output and the buzzer output will be activated if functioning with 2 measurement inputs: top probe error Remedies: <ul style="list-style-type: none"> the same as the previous case but relative to the top probe Main consequences: <ul style="list-style-type: none"> the top output will be deactivated the acoustics output and the buzzer output will be activated
Pr2	floor probe error (only if functioning with 2 measurement inputs) Remedies: <ul style="list-style-type: none"> the same as the previous case but relative to the floor probe Main consequences: <ul style="list-style-type: none"> the floor output will be deactivated the acoustics output and the buzzer output will be activated

When the causes of the alarm have disappeared, the instrument will go back to normal functioning.

13 TECHNICAL DATA

13.1 Technical data

Container: grey self-extinguishing.

Front panel protection rating: IP 54.

Connections: removable terminal boards (power supply, inputs and outputs), 6-pole connector (serial port).

Temperature of use: from 0 to 55 °C (from 32 to 131 °F; 10 ... 90% relative humidity without condensate).

Power supply: 115 ... 230 VAC, 50/60 Hz, 5 VA (approx) or 24 VAC, 50/60 Hz.

Alarm buzzer: incorporated.

Measurement inputs: can be configured:

- 1 (chamber probe) for J/K thermocouple if functioning with 1 measurement input
- 2 (top probe and floor probe) for J/K thermocouple if functioning with 2 measurement inputs

Digital inputs: 1 (multifunction) or NO/NC contact (potential-free contact, 5 V 1 mA).

Range of measurement: from -99 to 800 °C (from -99 to 999 °F) for J thermocouple, from -99 to 999 °C (from -99 to 999 °F) for K thermocouple.

Resolution: 1 °C/1 °F.

Uscite digitali: 3 relays:

- relay K1: 8 A res. @ 250 VAC (NO contact)
- relay K2: 8 A res. @ 250 VAC (NO contact)
- relay K3: 8 A res. @ 250 VAC (contact in exchange)

The utility managed by each output depends on the instrument code (see paragraph 2.1).

Other outputs: buzzer output (12 V, max. 20 mA); the output is activated during alarms and errors, with continuous contribution.

Serial port: port for the communication with the supervising system (through a serial interface, via TTL, with MODBUS communication protocol) or with the programming key.

14 WORK SET-POINT, POWER DISTRIBUTED AND CONFIGURATION PARAMETERS

14.1 Work set-point

	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	WORK SET-POINT
r1	r2		°C/°F (1)	150	not visible	work set-point
r1	r2		°C/°F (1)	not visible	150	top set-point
r7	r8		°C/°F (1)	not visible	150	floor set-point


14.2 Power distributed

PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	POWER DISTRIBUTED
0	100	%		50	not visible	power distributed to the top (percentage of c1); see also c0 and c1
0	100	%		50	not visible	power distributed to the floor (percentage of c1); see also c0 and c1

14.3 Configuration parameters

PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	WORK SET-POINT
SP	r1	r2	°C/°F (1)	150	not visible	work set-point
SP1	r1	r2	°C/°F (1)	not visible	150	top set-point
SP2	r7	r8	°C/°F (1)	not visible	150	floor set-point
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	POWER DISTRIBUTED
Po1	0	100	%	50	not visible	power distributed to the top (percentage of c1); see also c0 and c1
Po2	0	100	%	50	not visible	power distributed to the floor (percentage of c1); see also c0 and c1
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	MEASUREMENT INPUTS
CA1	-25/-50	25/50	°C/°F (1)	0	0	with 1 measurement input, chamber probe inset; with 2 measurement inputs, top probe offset
CA2	-25/-50	25/50	°C/°F (1)	not visible	0	floor probe offset
P0	0	1	----	0	0	type of probe 0 = J 1 = K
P2	0	1	----	0	0	temperature unit of measurement (2) 0 = °C 1 = °F quantity shown by the upper part of the display during the on state or during normal functioning
P5	0	(3)	----	0	0	0 = with 1 measurement input, chamber temperature; with 2 measurement inputs, top temperature 1 = with 1 measurement input, work set-point; with 2 measurement inputs, top set-point 2 = temperature of the floor 3 = floor set-point
P6	0	(4)	----	2	2	quantity shown by the lower part of the display during the on state or during normal functioning 0 = with 1 measurement input, chamber temperature; with 2 measurement inputs, top temperature 1 = with 1 measurement input, work set-point; with 2 measurement inputs, top set-point 2 = value of the cooking timer or its count if the timer is active 3 = temperature of the floor 4 = floor set-point
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	MAIN REGULATOR
r0	1	99	°C/°F (1)	5	5	with 1 measurement input, work set-point differential; with 2 measurement inputs, top set-point differential
r1	0	r2	°C/°F (1)	50	50	with 1 measurement input, minimum work set-point; with 2 measurement inputs, top minimum set-point
r2	r1	999	°C/°F (1)	350	350	with 1 measurement input, maximum work set-point; with 2 measurement inputs, top maximum set-point
r6	1	99	°C/°F (1)	not visible	5	floor set-point differential
r7	0	r8	°C/°F (1)	not visible	50	minimum floor set-point
r8	r7	999	°C/°F (1)	not visible	350	maximum floor set-point
r12	0	1	----	0	0	restraint between the top output and the cooking timer 1 = YES - the top output remains off if the cooking timer count is not in progress
r14	0	1	----	0	0	restraint between the floor output and the cooking timer 1 = YES - the floor output remains off if the cooking timer count is not in progress
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	STEAM INJECTION
t0	0	1	----	0	0	steam injection functioning mode 0 = pressing the  key causes the injection of steam for the time established with parameter t2 or for the entire duration that the key is pressed. The parameter t1 establishes the minimum time that can pass between the two successive injections. 1 = pressing the  key enables automatic injection of the steam in cyclical mode (parameter t2 establishes the switch-on duration of the injector and parameter t1 establishes switch-off duration)
t1	0	250	s	1	1	if t0 = 0, minimum time that passes between two successive injections if t0 = 1, injector switch-off duration
t2	1	250	ds (5)	10	10	if t0 = 0, minimum injection duration if t0 = 1, injector switch-on duration
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	VARIOUS
c0	0	2	----	0	not visible	restraint between the power distributed to the top and power distributed to the floor 0 = no restraint 1 = the modification of the power supplied to an output automatically causes the supply of the maximum power to the other 2 = the modification of the power supplied to an output causes an automatic adaptation of the power supplied to the other such to guarantee that the sum of the two percentages is always 100
c1	1	999	s	80	not visible	cycle time for the top output and floor output switch-on, see also Po1 and Po2
c2	0	3	----	1	not visible	event that causes the activation of the rapid heating function 0 = function cannot be activated 1 = press  for 1s (make sure that the instrument is in on state and that no procedure is in progress) 2 = pass from the stand-by state to the on state 3 = press  for 1s (make sure that the instrument is in on state and that no procedure is in progress) or pass from the stand-by state to the on state
c3	0	99	°C/°F (1)	10	not visible	temperature of the chamber over which the rapid heating function is interrupted (relative to the work set-point i.e. "work set-point - c3")
c4	-1	120	s	15	15	duration of buzzer activation and of the acoustic output on conclusion of the cooking timer count; see also c9 (6) (7) -1 = the buzzer and the acoustic output must be deactivated in manual mode by pressing a key
c5	0	60	min	20	20	time that passes between the activation of the airhole and the conclusion of the cooking timer count, see also c6
c6	0	60	min	20	20	duration of the activation of the airhole at conclusion of the cooking timer count, see also c5
c7	00:00	60:00	min:s	00:30	00:30	duration of the activation of the airhole in manual mode
c9	0	120	s	10	10	time that passes between the activation of the buzzer and the acoustic output and the conclusion of the cooking timer count, see also c4
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	TEMPERATURE ALARMS
A1	0	999	°C/°F (1)	0	0	with 1 measurement input, temperature of the chamber above which the chamber temperature alarm is activated; with 2 measurement inputs, temperature of the top above which the top temperature alarm is activated; see also A3 (8)
A2	0	240	min	0	0	with 1 measurement input, chamber temperature alarm delay; with 2 measurement inputs, top temperature alarm delay
A3	0	2	----	0	0	with 1 measurement input, type of chamber temperature alarm delay; with 2 measurement inputs, type of top temperature alarm delay 0 = no alarm 1 = absolute (i.e. A1) 2 = with 1 measurement input, relative to the work set-point (i.e. "work set-point + A1"); with 2 measurement inputs, relative to the top set-point (i.e. "top set-point + A1")
A4	0	999	°C/°F (1)	not visible	0	floor temperature above which the floor temperature alarm is activated, see also A6 (8)
A5	0	240	min	not visible	0	floor temperature alarm delay
A6	0	2	----	not visible	0	type of floor temperature alarm 0 = no alarm 1 = absolute (i.e. A4) 2 = relative to the floor set-point (i.e. "floor set-point + A4")

PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	DIGITAL INPUTS
i5	0	4	----	0	0	effect caused by the activation of the multifunction input 0 = no effect 1 = <u>START/INTERRUPTION OF THE COOKING TIMER</u> - the activation of the input will cause the cooking timer to start and the successive activation will cause its interruption 2 = <u>CHAMBER LIGHT SWITCH-ON/OFF</u> - the activation of the input will cause the chamber light to switch-on and the successive activation will cause its switch-off 3 = <u>BUZZER, ACOUSTIC OUTPUT AND BUZZER OUTPUT DEACTIVATION</u> - the activation of the input will cause deactivation of the buzzer, the acoustic output and the buzzer output (activate the input again to deactivate these utilities again) 4 = <u>STEAM INJECTION</u> - in this case: <ul style="list-style-type: none"> ▪ if t0 = 0, the activation of the input causes the injection of steam for the time established with parameter t2 or for the entire duration that the key is pressed (parameter t1 establishes the minimum time that can pass between the two successive injections) [9] ▪ if t0 = 1, the activation of the input will enable automatic steam injection (in cyclical mode; parameter t2 establishes the duration of the switch-on of the injector and parameter t1 establishes the duration of switch-off) until the input is activated again [9]
i6	0	1	----	0	0	type of contact of the multifunction input 0 = NO (input active with closed contact) 1 = NC (input active with open contact)
PARAM.	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	SERIAL NETWORK (MODBUS)
LA	1	247	----	247	247	instrument address
Lb	0	3	----	2	2	baud rate 0 = 2.400 baud 1 = 4.800 baud 2 = 9.600 baud 3 = 19.200 baud
LP	0	2	----	2	2	parity 0 = none (no parity) 1 = odd 2 = even

- (1) the unit of measurement depends on parameter P2
- (2) **set the parameters relative to the regulators appropriately after modification of parameter P2**
- (3) the value depends on the type of functioning (1 with 1 measurement input and 3 with 2 measurement inputs)
- (4) the value depends on the type of functioning (2 with 1 measurement input and 4 with 2 measurement inputs)
- (5) ds = tenths of second
- (6) the buzzer and the acoustic output are activated before the conclusion of the cooking timer count (of the time established with the parameter c9), for the time established with parameter c4
- (7) if the cooking timer is interrupted (with the procedure given in paragraph 5.4 or by activation of the malfunction input), the duration of buzzer activation and of the acoustic output and the flashing duration of the 00:00 indication will be 3 seconds
- (8) the parameter differential is 10 °C/18 °F
- (9) pressing the  key causes the associated effect.