




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 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).

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 Airhole deactivation

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

8 SIGNALS

8.1 Signals

LED	MEANING
	temperature regulation LED if it is on, the output for the regulation of the temperature will be activated if it flashes, the work set-point modification is in progress (with the procedure indicated in paragraph 3.3)
	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 progressand 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 programmed switch-on state or in the stand-by state
delay	programmed switch-on LED if it is on, the instrument is in the programmed switch-on state if it is flashing, setting of the programmed switch-on day and time is in progress
clock	real time LED if it is on, the quantity displayed by the lower part of the display will be the real time if it is flashing, setting of the day and real time is in progress
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 progressthe cooking timer count will be in progress but the lower part of the display will be showing another quantity
set	work set-point LED if it is on, the quantity shown by the lower part of the display will be the work set-point value

9 INDICATIONS

9.1 Indications (in the lower part of the display)

INDICAT. MEANING

decrease the time established with parameter c9 is missing... 1 second to the conclusion of the cooking timer count

time c9 00:00 flashing: the cooking timer count has ended

10 ALARMS

10.1 Alarms

CODE	MEANING
AL	temperature alarm Remedies: <ul style="list-style-type: none">check the chamber temperaturesee parameters A1 and A3 Consequences: <ul style="list-style-type: none">the alarm output will be activatedthe acoustics output and the buzzer output will be activated
PF1	power supply cut-off alarm during cooking timer count with duration shorter than the time established with parameter r13 Remedies: <ul style="list-style-type: none">press a key to restore the normal displaycheck the causes that brought about the power supply cut-off Main consequences: <ul style="list-style-type: none">the count will continue until the instrument is poweredthe acoustics output and the buzzer output will be activated
PF2	power supply cut-off alarm during cooking timer count with duration longer than the time established with parameter r13 Remedies: <ul style="list-style-type: none">press a key to restore the normal displaycheck the causes that brought about the power supply cut-off Main consequences: <ul style="list-style-type: none">the count will be interruptedthe 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 (codes **"PF1"** and **"PF2"**) which requires a key to be pressed.

11 INTERNAL DIAGNOSTICS

11.1 Internal diagnostics

CODE	MEANING
Pr1	chamber probe error Remedies: <ul style="list-style-type: none">in the models for J/K thermocouple, see parameter P0, in the models for Pt 100 probe, check the type of probecheck probe integritycheck the instrument-probe connectioncheck the chamber temperature Main consequences: <ul style="list-style-type: none">the temperature regulation output will be deactivatedthe acoustics output and the buzzer output will be activated
rtc	the lower part of the display: clock error Remedies: <ul style="list-style-type: none">set the day and real time again Main consequences: <ul style="list-style-type: none">the programmed switch-on will not be availablethe acoustics output and the buzzer output will be activated

When the cause of the alarm disappears the instrument restores normal functioning, except for clock error (code **"rtc"**) that requires the day and real time to be set.

12 TECHNICAL DATA

12.1 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.

Keeping the clock data in a power-cut: 24 h with battery charged.

Battery charging time: 2 min without interruptions (the battery is charged by the instrument power supply).

Alarm buzzer: incorporated.

measurement inputs: 1 (chamber probe) for J/K thermocouple or Pt 100 2 wire probe (according to the model).

Digital inputs: 2 inputs:

- on/stand-by input in high voltage (230 VAC) with configurable polarity
- multifunction input, for 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, from -99 to 650 °C (from -99 to 999 °F) for Pt 100 probe.

Resolution: 1 °C/1 °F.

Digital outputs: 6 relays:

- temperature regulation relay:** 8 A res. @ 250 VCA (contact in exchange)
- cooking timer relay:** 8 A res. @ 250 VCA (NO contact)
- acoustic output relay:** 8 A res. @ 250 VCA (NO contact)
- airhole relay:** 8 A res. @ 250 VCA (NO contact)
- steam injection relay:** 8 A res. @ 250 VCA (NO contact)
- on/stand-by relay:** 8 A res. @ 250 VCA (contact in exchange).

The maximum current accepted on clamp 23 is 10 A.

To set the utility managed by each output, see paragraph 3.1.

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.

13 WORK SET-POINT AND CONFIGURATION PARAMETERS

13.1 Work set-point

	MIN.	MAX.	U.M.	DEF.	WORK SET-POINT
r1	r2		°C/°F (1)	150	work set-point

13.2 Configuration parameters



PARAM.	MIN.	MAX.	U.M.	DEF.	WORK SET-POINT
SP	r1	r2	°C/°F (1)	150	work set-point
PARAM.	MIN.	MAX.	U.M.	DEF.	MEASUREMENT INPUTS
CA1	-25/-50	25/50	°C/°F (1)	0	chamber probe offset
P0	0	1	----	0	type of probe (not visible in the models for Pt 100 probe) 0 = J 1 = K

P2	0	1	----	0	temperature unit of measurement (2) 0 = °C 1 = °F
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P5	0	1	----	0	quantity shown by the upper part of the display during the on state or during normal functioning 0 = chamber temperature 1 = work set-point
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P6	0	3	----	2	quantity shown by the lower part of the display during the on state or during normal functioning 0 = chamber temperature 1 = work set-point 2 = value of the cooking timer or its count if the timer is active 3 = day and real time
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PARAM.	MIN.	MAX.	U.M.	DEF.	MAIN REGULATOR
r0	1	99	°C/°F (1)	5	work set-point differential
r1	0	r2	°C/°F (1)	50	minimum work set-point
r2	r1	999	°C/°F (1)	350	maximum work set-point
r12	0	1	----	0	restraint between the output state for the regulation of the temperature and the cooking timer 1 = YES - the temperature regulation output remains off if the cooking timer count is not in progress
r13	0	240	min	240	duration of a power supply cut-off duration that occurs during a cooking timer count exceeding which the count is interrupted (3)

PARAM.	MIN.	MAX.	U.M.	DEF.	STEAM INJECTION
t0	0	1	----	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	if t0 = 0, minimum time that passes between two successive injections if t0 = 1, injector switch-off duration
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t2	1	250	ds (4)	10	if t0 = 0, minimum injection duration if t0 = 1, injector switch-on duration
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PARAM.	MIN.	MAX.	U.M.	DEF.	VARIOUS
c4	-1	120	s	15	duration of buzzer activation and of the acoustic output on conclusion of the cooking timer count; see also c9 (5) (6) -1 = the buzzer and the acoustic output must be deactivated in manual mode by pressing a key

c5	0	60	min	20	time that passes between the activation of the airhole and the conclusion of the cooking timer count, see also c6
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c6	0	60	min	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	duration of the activation of the airhole in manual mode

c8	0	1	----	1	showing the real time in the lower part of the display during the stand-by state 1 = YES
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c9	0	120	s	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
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c12	0	999	min	60	time that must pass (from programmed switch-on of the instrument) without having operated on the keys so that the instrument passes to the programmed switch-on state again 0 = no function
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PARAM.	MIN.	MAX.	U.M.	DEF.	TEMPERATURE ALARMS
A1	0	999	°C/°F (1)	0	temperature above which the temperature alarm is activated, se also A3 (7)
A2	0	240	min	0	temperature alarm delay
A3	0	2	----	0	type of temperature alarm 0 = no alarm 1 = absolute (i.e. A1) 2 = relative to the work set-point (i.e. "work set-point + A1")

PARAM.	MIN.	MAX.	U.M.	DEF.	DIGITAL INPUTS
i1	0	1	----	0	polarity of the on/stand-by input (instrument off with input active) (8) 0 = live input active 1 = non-live input active
i5	0	3	----	0	effect caused by the activation of the multifunction input 0 = no effect 1 = STAR/INTERRUPTION OF THE COOKING TIMER - the activation of the input will cause the cooking timer to start and the successive activation will cause its interruption 2 = BUZZER, ACOUSTIC OUTPUT AND BUZZER OUTPUT DEACTIVATION - 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) 3 = STEAM INJECTION - 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	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.	DEF.	SERIAL NETWORK (MODBUS)
LA	1	247	----	247	instrument address
Lb	0	3	----	2	baud rate 0 = 2.400 baud 1 = 4.800 baud 2 = 9.600 baud 3 = 19.200 baud
LP	0	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) if the power supply cut-off is shorter than the time established with parameter r13, the count will also continue when the instrument is not powered


(4) ds = tenths of second

(5) the buzzer and the acoustic output are activated 10 s before the conclusion of the count of the cooking timer, for the time established with parameter c4

(6) 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

(7) the parameter differential is 10 °C/18 °F

(8) the activation of the on/stand-by input causes the passage from the on state or from the programmed switch-on state to the stand-by state: the successive deactivation always causes the passage to the on state. If the on/stand-by input is active, it will not be allowed to pass from the stand-by state to the on state or the programmed switch-on state by pressing the keys

(9) pressing the  key causes the associated effect.