EV8316 Digital controller with 6 outputs for electric bread ovens, with RTC functions, programmed switch-on and cooking timer

version 1.03

GB ENGLISH

1 IMPORTANT

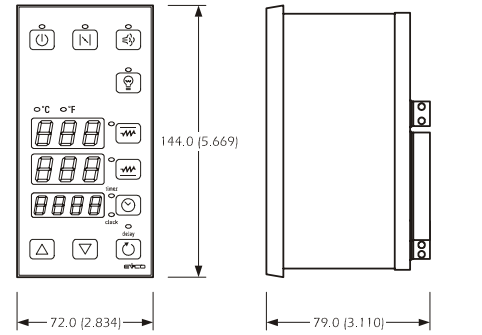
1.1 Important

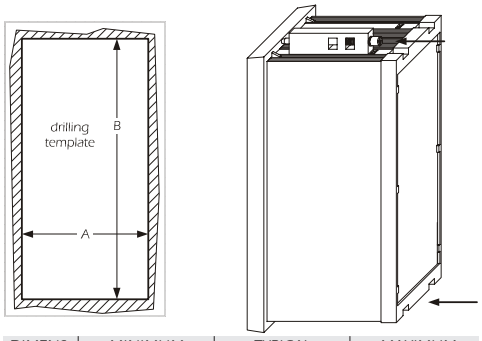
Read these instructions carefully before installation and use and follow all recommendations regarding installation and for the electric connection; keep these instructions for future reference.

The instrument must be disposed of according to local Standards regarding the collection of electric and electronic appliances.

1.2 Dimensions and installation

Panel, with supplied screw bracket; dimensions in mm (in).





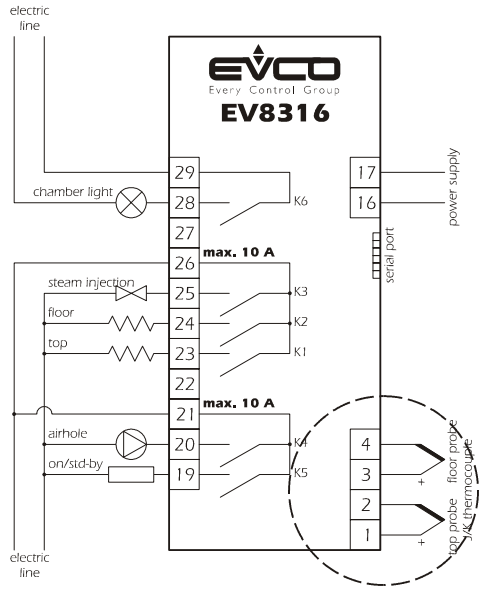
DIMENS.	MINIMUM	TYPICAL	MAXIMUM
A	67.0 (2.637)	67.0 (2.637)	67.8 (2.669)
B	138.0 (5.433)	138.0 (5.433)	138.8 (5.464)

Installation recommendations:

- the thickness of the panel must not exceed 10.0 mm (0.393 in)
- position the brackets as indicated in the drawing in this paragraph; moderate the coupling torque
- make sure that the work 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 shocks
- in compliance with Safety Standards, the protection against any contact with the electric parts must be ensured via correct installation of the instrument. All parts that ensure protection must be fixed in a way such that they cannot be removed without the aid of a tool.

1.3 Electric connection

With reference to the wiring diagram: the serial port for communication with the programming key.



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 one, the humidity could condense inside. Wait about one hour before applying power
- make sure that the power supply voltage, frequency and operational electric power correspond to those of the local power supply
- disconnect the power supply before performing any type of maintenance
- equip the probes with a protection able to insulate them against 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

It is possible to set the work temperature of the top independently from that of the floor.

The utilities managed by the digital outputs (i.e. the K1 relays... K6) are the following:

RELAY	MANAGED UTILITY
K1	top
K2	floor
K3	steam injection
K4	airhole
K5	on/stand-by
K6	chamber light

2.2 Management of the utilities

Top.

The output activity will mainly depend on the temperature of the top (top probe), the top setpoint and the parameter r0.

Floor.

The output activity will mainly depend on the temperature of the floor (floor probe), the floor setpoint and the parameter r6.

Steam injection.

The activity of the output depends mainly on the parameters t0, t1 and t2.

Airhole.

The output is activated in the following conditions:

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

On/Stand-by.

The output is activated during the "on" state (see paragraph 3.1).

Chamber light.

The output is activated in manual mode.

3 USER INTERFACE

3.1 Preliminary considerations

The following functioning states exist:

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

Successively, the term "switch-on" means that 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 the instrument is powered it re-proposes the state in which it found itself at the time when the power supply was disconnected.

3.2 Selecting the functioning state

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

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

To pass from the on state to the programmed switch-on state:

- make sure that no procedure is in progress
- press ⏻ and ⏲ for 1s.

To pass from the programmed switch-on state to the on state:

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

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

- make sure that no procedure is in progress
- press ⏻ and ⏲ for 1s.

3.3 The display

If the instrument is in the on state:

- the highest display will show the quantity established with parameter P5:
  - if P5 = 0, the display will show the top temperature
  - if P5 = 1, the display will show the top setpoint (in this case, the decimal point of the digit to the far right will be on)
- the central display will show the quantity established with parameter P6:
  - if P6 = 0, the display will show the floor temperature
  - if P6 = 1, the display will show the floor setpoint (in this case, the decimal point of the digit to the far right will be on)
- the lowest display will show the quantity established with parameter P7:
  - if P7 = 0, the display will show the value of the cooking timer or its countdown if the timer is active (in this case the "**timer**" LED will be on); the value of the cooking timer will be displayed in the hour:minutes format
  - if P7 = 1, the display will show the real time (in this case the "**clock**" LED will be on); the real time is displayed in the 24h format (hours:minutes).

See also paragraphs 3.5, 3.7 and 3.9

If the instrument is in the programmed switch-on state:

- the highest display will be off
- the central display will show the day of the next switch-on; the day is visualised in 1 ... 7 format (number 1 corresponds to Monday; if no switch-on is programmed, the central display will show "**- - -**")
- the lowest display will show the time of the next switch-on; the time is displayed in the 24h format (hours:minutes; if no switch-on is programmed, the lowest display will show "**- - - -**")
- the "**delay**" LED will be on
- the LED ⏻ will be on.

If the instrument is in the stand-by state:

- the highest display will be off
- the central display and the lowest one:
  - will be off if parameter c8 is set at 0
  - they will respectively show the day of the week and the real time if the parameter c8 is set at 1 (in this case the "**clock**" LED will be on); the day is displayed in the 1 ... 7 format (number 1 corresponds to Monday), the real time in the 24 hour format (hours:minutes)
- the LED ⏻ will be on.

3.4 Temporary setting of the quantity shown on the highest display during the on state

- make sure that no procedure is in progress
- press ▭ and ⏲ for 1s several times. the highest display will show one of the labels stated in the tables in paragraph 3.5 for 2s, after which it will show the corresponding value.

A power cut causes the restore of the display of the quantity established with parameter P5.

3.5 Learning of the quantity shown on the highest display during the on state

- make sure that no procedure is in progress
- press ▭ and ⏲ : the highest display will show one of the labels reported in the following table for 2s:

LABEL	MEANING
Pb1	temperature of the top
SP1	top setpoint

3.6 Temporary setting of the quantity shown on the central display during the on state

- make sure that no procedure is in progress
- press ▭ and ⏲ for 1s several times. the central display will show one of the labels stated in the tables in paragraph 3.7 for 2s, after which it will show the corresponding value.

A power cut causes the restore of the display of the quantity established with parameter P6.

3.7 Learning of the quantity shown on the central display during the on state

- make sure that no procedure is in progress
- press ▭ and ⏲ : the central display will show one of the labels given in the following table for 2s:

LABEL	MEANING
Pb2	temperature of the floor
SP2	floor setpoint

3.8 Temporary setting of the quantity shown on the lowest display during the on state

- make sure that no procedure is in progress
- press ⏲ and ⏲ for 1s several times. the lowest display will show one of the labels stated in the tables in paragraph 3.9 for 2s, after which it will show the corresponding value.

A power cut causes the restore of the display of the quantity established with parameter P7.

3.9 Learning of the quantity shown on the lowest display during the on state

- make sure that no procedure is in progress
- press ⏲ and ⏲ : the lowest display will show one of the labels reported in the following table for 2s:

LABEL	MEANING
tine	cooking timer value or count if the timer is activated
rtc	real time

3.10 Chamber light switch-on/off

- make sure that no procedure is in progress
- press 🔒

3.11 Buzzer silencing

- make sure that no procedure is in progress
- press a key (the first time the key is pressed does not cause the associated effect).

4 SETTINGS

4.1 Setting the real day and time

▪ make sure that the instrument is in the stand-by state and no procedure is in progress
▪ press [set] and [⏲] : the central display will show the day of the week and the lowest one the real time; the indication relative to the day and the "**clock**" LED will flash.

The day will be displayed in the format 1 ... 7 (number 1 corresponds to Monday), the real time in the 24 hour format (hours:minutes)

To modify the day:
▪ press [△] or [▽] within 15s
▪ press [set] : the left part of the indication relative to the real time will flash.

To modify the time:
▪ press [△] or [▽] within 15s
▪ press [set] : the right part of the indication relative to the real time will flash.

To modify the minutes:
▪ press [△] or [▽] within 15s
▪ press [set] : the "**clock**" LED will switch-off, after which the instrument will exit the procedure.

To go back to previous levels:
▪ press [prg] several times during the procedure.

To exit the procedure in advance:
▪ do not operate for 15s (any modifications will be saved).

4.2 Setting the top setpoint

To modify the top setpoint:
▪ make sure that the instrument is in the on state and no procedure is in progress
▪ press [set] : the central display will show "**SP1**", the highest one the corresponding value and the LED will flash
▪ press [△] or [▽] within 15s; see also parameters r1 and r2
▪ press [set] : 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).

It is also possible to set the top setpoint via the parameter SP1.

4.3 Setting the floor setpoint

To modify the floor setpoint:
▪ make sure that the instrument is in the on state and no procedure is in progress
▪ press [prg] : the highest display will show "**SP2**", the central one the corresponding value and the LED will flash
▪ press [△] or [▽] within 15s; see also parameters r7 and r8
▪ press [prg] : 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).

It is also possible to set the floor setpoint via the parameter SP2.

4.4 Setting the configuration parameters

To access the procedure:
▪ make sure that the instrument is in the stand-by state and no procedure is in progress
▪ press [△] and [▽] for 4s: the central display will show "**PA**"
▪ press [set] : the lowest display will show the corresponding value
▪ press [△] or [▽] within 15s to set "**-19**"
▪ press [set] or do not operate for 15s
▪ press [△] and [▽] for 4s: the central display will show "**SP1**".

To select a parameter:
▪ press [△] or [▽]

To modify a parameter:
▪ press [set] : the lowest display will show the corresponding value
▪ press [△] or [▽] within 15s
▪ press [set] or do not operate for 15s.

To exit the procedure:
▪ press [△] and [▽] for 4s or do not operate for 60s (any modifications will be saved).

Cut off the power supply to the instrument after modification of the parameters.

4.5 Restore the default value of the configuration parameters

▪ make sure that the instrument is in the stand-by state and no procedure is in progress
▪ press [△] and [▽] for 4s: the central display will show "**PA**"
▪ press [set] : the lowest display will show the corresponding value
▪ press [△] or [▽] within 15s to set "**743**"
▪ press [set] or do not operate for 15s
▪ press [△] and [▽] for 4s: the central display will show "**dEF**"
▪ press [set] : the lowest display will show the corresponding value
▪ press [△] or [▽] within 15s to set "**149**"
▪ press [set] or do not operate for 15s: the central display will show "**dEF**" flashing for 4 s, after which "**dEF**" switches on cut the instrument power supply off
▪ cut the instrument power supply off.

To exit the procedure in advance:
▪ press [△] and [▽] for 4s during the procedure (i.e. before setting "**149**": restore will not be performed).

Make sure that the default value of the parameters is appropriate.

5 PROGRAMMED SWITCH-ON

5.1 Preliminary considerations

The programmed switch-on allows to plan the automatic switch-on of the instrument.

On switch-on the instrument will function with the last settings memorised before being passed to the programmed switch-on state (see paragraph 3.2).

It is possible to plan 14 switch-on times; there are 12 possible combinations of switch-on days.

5.2 Setting programmed switch-on

To access the procedure:
▪ make sure that the instrument is in the on state and no procedure is in progress
▪ press [⏲] : the highest display will show flashing "**H01**" (it is the label of the switch-on time), the central one a label relative to a combination of switch-on days, the lowest one the switch-on time and the "**delay**" LED will flash.

The following combinations of days for switch-on available are the following:

LABEL	COMBINATION OF DAYS
---	Never
- 1 -	Monday
- 2 -	Tuesday
- 3 -	Wednesday
- 4 -	Thursday
- 5 -	Friday
- 6 -	Saturday
- 7 -	Sunday
1 - 5	from Monday to Friday
1 - 6	from Monday to Saturday
1 - 7	from Monday to Sunday
6 - 7	Saturday and Sunday

The time is displayed in the 24 h format (hours:minutes).

To select a switch-on time:
▪ press [△] or [▽] within 15s (for example to select "**H07**").

To select a combination of days to which to apply the selected switch-on time (in the example,"**H07**"):
▪ press [set] : the indication relative to the combination of the days will flash
▪ press [△] or [▽] within 15s (for example to select "**1 - 5**").

To set the selected switch-on time (in the example,"**H07**"):
▪ press [set] : the left part of the indication relative to the switch-on time will flash.

To modify the hour:
▪ press [△] or [▽] within 15s
▪ press [set] : the right part of the indication relative to the switch-on time will flash.

To modify the minutes:
▪ press [△] or [▽] within 15s
▪ press [set] : the highest display will show the flashing switch-on time (in the example "**H07**"), the central one the combination of the days (in the example "**1-5**") and the lowest one the switch-on time.

To set another programmed switch-on, repeat the procedure given in this paragraph.

To go back to previous levels:
▪ press [prg] several times during the procedure.

To exit the procedure:
▪ press [⏲] or do not operate for 15s: the "**delay**" LED will switch-off.

To exit the procedure in advance:
▪ press [⏲] for 15s during the procedure (i.e. before modifying the minutes: any modifications will not be saved).

For the instrument to automatically switch-on at the day and time set, these must be in the programmed switch-on mode

To pass from the on state (or the stand-by state) to the programmed switch-on state:
▪ make sure that no procedure is in progress
▪ press [⏻] and [⏲] for 1s.

If the instrument is in the programmed switch-on state:
▪ the highest display will be off
▪ the central display will show the day of the next switch-on; the day is visualised in 1 ... 7 format (number 1 corresponds to Monday; if no switch-on is programmed, the central display will show "**- - -**")
▪ the lowest display will show the time of the next switch-on; the time is displayed in the 24h format (hours:minutes; if no switch-on is programmed, the lowest display will show "**- - - -**")
▪ the "**delay**" LED will be on
▪ the LED ⏻ will be on.

5.3 Temporary modification of the day and time of the next switch-on

To access the procedure:
▪ make sure that the instrument is in the programmed switch-on state and that no procedure is in progress
▪ press [⏲] : the central display will show the next switch-on, the lowest one the next switch-on; the indication relative to the day and the "**delay**" LED will flash.

The day is displayed in format 1 ... 7 (number 1 corresponds to Monday), the time in the 24 h format (hours:minutes).
▪ press [△] or [▽] within 15s
▪ press [set] : the left part of the indication relative to the switch-on time will flash.

To modify the hour
▪ press [△] or [▽] within 15s
▪ press [set] : the right part of the indication relative to the switch-on time will flash.

To modify the minutes:
▪ press [△] or [▽] within 15s
▪ press [set] : the "**delay**" LED will switch-on, after which the instrument will exit the procedure.

To go back to previous levels:
▪ press [prg] several times during the procedure.

To exit the procedure in advance:
▪ press [⏲] or do not operate for 15s (any modifications will not be saved).

The temporary modification of an ignition is re-proposed also after a power cut and has exclusive effect on the imminent switch-on and not on those previously set.

If passing from the programmed switch-on state to any other state, the modification will not be re-proposed.

Exclusion of the next switch-on for the benefit of another already programmed.

5.4 Exclusion of the next switch-on for the benefit of another already programmed

▪ make sure that the instrument is in the programmed switch-on state and that no procedure is in progress
▪ press [⏲] for 1s: the central display will show the day of the next switch-on, the lowest one the next switch-on and the "**delay**" LED will flash.

The day will be displayed in the format 1 ... 7 (number 1 corresponds to Monday), the time in the 24 hour format (hours:minutes)
▪ press [△] within 15s to select another switch-on already programmed
▪ press [set] : The LED "**delay**" will switch-on, after which the instrument will exit the procedure.

To exit the procedure in advance:
▪ press [⏲] or do not operate for 15s (any modifications will not be saved).

The exclusion of a switch-on is re-proposed also after a power cut; the switch-ons excluded are re-proposed in the following day and time circumstances.

If passing to the programmed switch-on state or any other state, the exclusion will not be re-proposed.

6 COOKING TIMER

6.1 Preliminary considerations

The cooking timer allows to start the countdown.

The countdown is shown in the lowest display; the "**timer**" LED is on during the count.

Before the conclusion of the count (of the time established with parameter c9) the buzzer is activated, for the time established with parameter c4.

Before the conclusion of the count (of the time established with parameter c5) the vent is activated, for the time established with parameter c6.

6.2 Setting the cooking timer

▪ make sure that the instrument is in the on state; that the cooking timer count is not in progress and no procedure is in progress
▪ press [set] and [⏲] : the lowest display will show the cooking timer count; the left side and the "**timer**" LED will flash.

The value of the cooking timer is displayed in the hours:minutes format.

To modify the hour:
▪ press [△] or [▽] within 15s
▪ press [set] : the right part will flash.

To modify the minutes:
▪ press [△] or [▽] within 15s.

The value of the cooking timer is displayed in the hours:minutes format.
▪ press [set] : the "**timer**" LED will switch-off, after which the instrument will exit the procedure.

To go back to previous levels:
▪ press [prg] several times during the procedure.

To exit the procedure in advance:
▪ do not operate for 15s (any modifications will be saved).

The cooking timer can also be set when the count is in progress (this modification is temporary, i.e. any power supply cut-off causes the value set with the procedure given at the start of this paragraph to be restored). If the value is set at 00:00 h:min, the count will be interrupted, the "**timer**" LED will switch-off and the buzzer will be activated for 3 seconds

6.3 Starting the cooking timer

▪ press [⏻] during timer setting: the "**timer**" LED will switch on
▪ make sure that the instrument is in the on state and no procedure is in progress
▪ press [⏲] : the "**timer**" LED will switch-on.

6.4 Starting the cooking timer and switch-off of the instrument on conclusion of the count

▪ make sure that the instrument is in the on state and no procedure is in progress
▪ press [⏲] for 4s: the "**timer**" LED will switch-on and the LED ⏻ will flash; the instrument will switch-off when the count is concluded.

6.5 Interrupting the cooking timer

▪ press [⏲] for 1s: the "**timer**" LED switches-off and the buzzer will be activated for 3 s.

7 STEAM INJECTION

7.1 Preliminary considerations

The steam injection functioning mode depends on parameter t0.
If the parameter t0 is set at 0, pressing the key will cause the injection of the 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 will 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: the parameter t2 establishes the duration of injector switch-on and the parameter t1 establishes the duration of switch-off).

7.2 Quick setting of parameter t2

- make sure that the instrument is in the on state and no procedure is in progress
- press and : the central display will show "**t2**", the lowest one the corresponding value and the LED will flash.
- press or within 15s.

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

- 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).

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

- make sure that the instrument is in the on state and no procedure is in progress
- press : the LED switches 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 cannot be deactivated in manual mode.

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

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

8 AIRHOLE

8.1 Preliminary considerations

The airhole is activated in the following conditions:

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

8.2 Quick setting of parameter c7

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

The parameter c7 is displayed 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.
- press : the LED will switch-off, after which the instrument will exit the procedure.

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

8.3 Activation of the vent in manual mode

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

To deactivate the airhole in manual mode.

8.4 Deactivation of the airhole in manual mode

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

9 SIGNALS

9.1 Signals

LED	MEANING
	top LED if it is on, the top output will be on if it flashes, the top setpoint is being modified (with the procedure indicated in paragraph 4.2)
	floor LED if it is on, the floor output will be on if it flashes, the floor setpoint is being modified (with the procedure indicated in paragraph 4.3)

	steam injection LED
	if it is on:
	▪ and the parameter t0 is set at 0, the steam injection will be in progress
	▪ and the parameter t0 is set at 1, the steam injection will be enabled
	if flashing:
	▪ the quick setting of the parameter t2 will be in progress (see paragraph 7.2)

	airhole LED if it is on, the vent will be activated in manual mode if flashing: ▪ the airhole will be activated due to the effect of the conclusion of the cooking timer count (parameter c6) ▪ the quick setting of the parameter t2 will be in progress (see paragraph 8.2)
	chamber light LED if it is on, the chamber light will be on
°C	degree Celsius LED if it is on, the unit of measurement of the temperatures will be the degree Celsius (parameter P2)
°F	degree Fahrenheit LED if it is on, the unit of measurement of the temperatures will be the degree Fahrenheit (parameter P2)
	on/stand-by LED if it is on, the instrument will be in the programmed switch-on state or in the stand-by state if it flashes, the cooking timer count will be in progress and the instrument will switch-off when the count ends
timer	cooking timer LED if it is on, the quantity shown on the lowest display will be the value of the cooking timer or its count if the timer is active if flashing: ▪ cooking timer setting will be in progress ▪ the cooking timer count will be in progress but the lowest display will be showing another quantity
delay	programmed switch-on LED if it is on, the instrument will be in the programmed switch-on state if it flashes, setting of the day and time of programmed switch-on will be in progress
clock	real time LED if it is on, the quantity shown on the lowest display will be the real time if it flashes, setting of the day and real time will be in progress

10 INDICATIONS

10.1 Indications

INDICAT.	MEANING
decrease time c9	the time established with parameter c9 is missing ... 1 second at the conclusion of the cooking timer count
00:00	flashing: the cooking timer count is concluded

11 ALARMS

11.1 Alarms

CODE	MEANING
AL1	top temperature alarm Remedies: ▪ check the top temperature ▪ see parameters A1 and A3 Consequences: ▪ the instrument continues to function regularly
AL2	floor temperature alarm Remedies: ▪ check the temperature of the floor ▪ see parameters A5 and A7 Consequences: ▪ the instrument continues to function regularly
PF1	power supply cut-off alarm during cooking timer count with duration shorter than the time established with parameter r13 Remedies: ▪ press a key to restore normal display ▪ check the causes of the power cut Main consequences: ▪ the count will continue even when the instrument is not powered ▪ the instrument continues to function regularly
PF2	power supply cut-off alarm during cooking timer count with duration longer than the time established with parameter r13 Remedies: ▪ press a key to restore normal display ▪ check the causes of the power cut Main consequences: ▪ the count will be interrupted

When the cause of the alarm has disappeared, the instrument restores normal functioning, except for power cut alarms during the cooking timer count (codes "**PF1**" and "**PF2**") which require pressing the button.

12 INTERNAL DIAGNOSTICS

12.1 Internal diagnostics

CODE	MEANING
Pr1	top probe error Remedies: ▪ see parameter P0 ▪ check the integrity of the probe ▪ check the instrument-probe connection ▪ check the chamber temperature Main consequences: ▪ the top output will be deactivated
Pr2	floor probe error Remedies: ▪ the same as the previous case but relative to the floor probe Main consequences: ▪ the floor output will be deactivated
rtc	clock error Remedies: ▪ set the day and real time again Main consequences: ▪ programmed switch-on will not be available

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

13 TECHNICAL DATA

13.1 Technical data

Container: grey self-extinguishing.
Front panel protection rating: IP 54.
Connections: extractable terminal board (power supply, inputs and outputs), 6 pole connector (serial).
Temperature of use: from 0 to 55 °C (from 32 to 131 °F, 10 ... 90% relative humidity without condensate).
Power supply: 230 VAC, 50/60 Hz, 4 VA or 24 VAC, 50/60 Hz, 4 VA.
Maintaining 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: 2 inputs:

- top probe, for J/K thermocouple
- floor probe, for J/K thermocouple

Measurement inputs: from -99 to 800 °C (from -99 to 999 °F) for J thermocouple, da -99 a 999 °C (from -99 to 999 °F) for K thermocouple.
Resolution: 1 °C/1 °F.
Digital outputs: 6 outputs:

- **top (K1 key):** 8 A res. @ 250 VAC (NO)
- **floor (K2 relay):** 8 A res. @ 250 VAC (NO)
- **steam injection (K3 relay):** 8 A res. @ 250 VAC (NO contact)
- **airhole (K4 relay):** 8 A res. @ 250 VAC (NO contact)
- **on/stand-by (K5 relay):** 16 A res. @ 250 VAC (NO contact)
- **chamber light (K6 relay):** 8 A res. @ 250 VAC or 6 A res. @ 12 VAC (NO contact)

The maximum current accepted on the clamps 21 and 26 is 10 A.
Serial ports: door for the communication with the programming key.

14 WORK SETPOINT AND CONFIGURATION PARAMETERS

14.1 Work setpoint

	MIN.	MAX.	U.M.	DEF.	WORK SET-POINT
	r1	r2	°C/°F (1)	0	top set-point
	r7	r8	°C/°F (1)	0	floor setpoint

14.2 Configuration parameters

PARAM.	MIN.	MAX.	U.M.	DEF.	WORK SET-POINT
SP1	r1	r2	°C/°F (1)	0	top set-point
SP2	r7	r8	°C/°F (1)	0	floor setpoint
PARAM.	MIN.	MAX.	U.M.	DEF.	MEASUREMENT INPUTS
CA1	-25/-50	25/50	°C/°F (1)	0	top probe offset
CA2	-25/-50	25/50	°C/°F (1)	0	floor probe offset
P0	0	1	---	0	type of probe 0 = J 1 = K
P2	0	1	---	0	temperature unit of measurement (2) 0 = °C 1 = °F
P5	0	1	---	0	quantity shown by the highest display during the on state or during normal functioning 0 = temperature of the top 1 = top set-point
P6	0	1	---	0	quantity shown on the central display during the on state or during normal functioning 0 = temperature of the floor 1 = floor setpoint
P7	0	1	---	0	quantity shown by the lowest display during the on state or during normal functioning 0 = value of the cooking timer or its count if the timer is active 1 = real time
PARAM.	MIN.	MAX.	U.M.	DEF.	MAIN REGULATOR
r0	1	99	°C/°F (1)	2	top set-point differential
r1	0	r2	°C/°F (1)	0	minimum top setpoint
r2	r1	999	°C/°F (1)	260	maximum top set-point
r6	1	99	°C/°F (1)	2	floor set-point differential
r7	0	r8	°C/°F (1)	0	minimum floor set-point
r8	r7	999	°C/°F (1)	260	maximum floor set-point
r12	0	1	---	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
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)
r14	0	1	---	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.	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
t2	1	250	ds (4)	10	if t0 = 0, minimum injection duration if t0 = 1, injector switch-on duration
PARAM.	MIN.	MAX.	U.M.	DEF.	VARIOUS
c4	-1	120	s	-1	duration of buzzer activation on conclusion of the cooking timer count; see also c9 -1= the buzzer must be deactivated in manual mode by pressing a key
c5	0	60	min	0	time that passes between the activation of the airhole and the conclusion of the cooking timer count, see also c6
c6	0	60	min	0	duration of the activation of the airhole at conclusion of the cooking timer count, see also c5
c7	00:00	60:00	min:s	60:00	duration of the activation of the airhole in manual mode
c8	0	1	---	1	displays the day of the week and the real time respectively in the central display and the lowest one during the stand-by status 1 = YES
c9	0	120	s	10	time that passes between the activation of the buzzer and the conclusion of the cooking timer count, see also c4
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
PARAM.	MIN.	MAX.	U.M.	DEF.	TEMPERATURE ALARMS
A1	0	999	°C/°F (1)	200	top temperature above which the top temperature alarm is activated; see also A3 (5)
A2	0	240	min	0	top temperature alarm delay
A3	0	2	---	1	type of top temperature alarm 0 = no alarm 1 = absolute (i.e. A1) 2 = relative to the top set-point (i.e. "top set-point + A1")
A4	0	999	°C/°F (1)	300	floor temperature above which the floor temperature alarm is activated, se also A6 (5)
A5	0	240	min	0	floor temperature alarm delay
A6	0	2	---	1	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.	DEF.	RESERVED
LA	---	---	---	---	reserved
Lb	---	---	---	---	reserved
LP	---	---	---	---	reserved

(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 parameter differential is 10 °C/18 °F.

EVCO S.p.A.
Via Mezzaterra 6, 32036 Sedico Belluno ITALY
Phone +39-0437-852468 ▪ Fax +39-0437-83648
info@evco.it ▪ www.evco.it