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

E ENGLISH IMPORTANT

Important

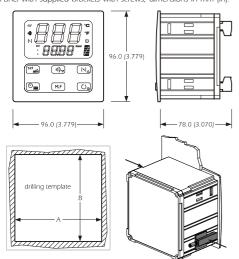
Read these instructions carefully before installation and use and follow all warnings regarding installation and for the electric connection. Keep these instructions with the instrument for future reference.



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

Dimensions and installation 1.2

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



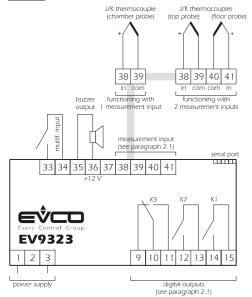
DIMENS.	MINIMUM	TYPICAL	MAXIMUM		
Α	92.0 (3.622)	92.0 (3.622)	92.8 (3.653)		
В	92.0 (3.622)	92.0 (3.622)	92.8 (3.653)		

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



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
- $\mbox{-}$ 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 main-
- 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

PRELIMINARY CONSIDERATIONS

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	can be set	can be set
	(top default)	(floor default)	(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 c51, 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 param-
- 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).

USER INTERFACE

3.1 **Preliminary considerations**

The following functioning states exist:

- the "on" state (the instrument is powered and on: the regulators can
- 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 standby 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-proposes the state that it was in when the power supply was disconnected.

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 o 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, he 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 (n) will be on.

SP

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

make sure no procedure is in progress

chamber temperature

work set-point

• press $[N_{\Delta}]$ and $[O_{\emptyset}]$: 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

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

■ make sure no procedure is in progress \bullet press $\fbox{\c N_{\triangle}}$ and $\fbox{\c O_0}$ 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.

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			

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

	secorius.				
LABEL MEANING					
	Pb1 temperature of the top				
SP1 top set-point					
tine value of the cooking timer or its count if the timer is act					
Pb2 temperature of the floor					
SP2 floor set-point					

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

- make sure no procedure is in progress
- ullet press $\ref{eq:press_point}$ and $\ref{eq:press_point}$ for 1s several times: the lower part of the display will show one of the labels given in the tables in paragraph 3.6 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 P6 to be restored.

3.8 Chamber light switch on/off

- make sure no procedure is in progress
- press MiF

Using the multifunction input, it is also possible to cause the same effect caused by pressing the $\fbox{\it MIF}$ key in remote mode.

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

3.9 Buzzer silencing

- make sure no procedure is in progress
- press a key (the first time the key is pressed, the associated effect is not

Pressing the key also causes the deactivation of the acoustic output

Using the multifunction input, it is also possible to deactivate the buzzer, the acoustic output and the buzzer output in remote mode.

SETTINGS

Setting the type of functioning (with 1 measurement input rather than 2)

To access the procedure:

- make sure that the instrument is in stand-by state and that no procedure is in progress
- ullet presslacksquare and lacksquare for 4s: the upper part of the display will show "PA"
- ${\color{red}\bullet}$ press ${\color{red}\bullet}$: the lower part of the display will show the corresponding value
- press 🔍 or 🕏 within 15s to set "**743**"
- press set
- press $\overline{\rm [N]_{\Delta}}$ and $\overline{\rm (s)_{e}}$ for 4s: the upper part of the display will show "Pb".

To modify the type of functioning:

• press : the lower part of the display will show the corresponding value.

The meaning of the values is the following:

VALUE	MEANING
1	functioning with 1 measurement input (chamber probe)
2	functioning with 2 measurement inputs (top probe and
	floor probe)

- press sor sy within 15s
- press set

To exit the procedure:

press | √ and ⊕ for 4s.

The modification of the type of functioning does not cause the configuration parameters default value to be restored.

4.2 Setting the instrument code

To access the procedure

- make sure that the instrument is in stand-by state and that no procedure is in progress
- press $_{\rm N_{\Delta}}$ and $_{\rm Syp}$ for 4s: the upper part of the display will show "PA"
- press $(M_{\rm min})$: the lower part of the display will show the corresponding value
- press N or Sy within 15s to set "**743**" press St
- press Na and Syp for 4s: the upper part of the display will show "Pb"
- press $[\mathbf{v}]_{\underline{\Delta}}$ or $[\mathbf{v}]_{\underline{v}}$ to select "**CFG**". To modify the instrument code:

- \bullet press $\overline{\mathbf{m}_{\underline{\omega}}}$: the lower part of the display will show the corresponding value
- press or within 15s
- press Set

To exit the procedure

press | √ and √ for 4s.

The modification of the instrument code does not cause the configuration parameters default value to be restored.

Setting the utility managed by each digital output 4.3 (only if the instrument code is set at 0)

To access the procedure:

- make sure that the instrument is in stand-by state and that no procedure is in progress
- press $[N]_{\underline{a}}$ and $[S]_{\overline{v}}$ for 4s: the upper part of the display will show "PA"
- press 🖦 : the lower part of the display will show the corresponding value

- press or within 15s to set "**743**"
- press(set
- press $|\mathbf{N}_{a}|$ and $|\mathbf{N}_{b}|$ for 4s: the upper part of the display will show "**Pb** press $|\mathbf{N}_{a}|$ or $|\mathbf{N}_{b}|$ or select "**do1**", "**do2**" or "**do3**".

The label meaning is the following:

LABEL MEANING do1 utility managed by the first digital output (relay K1) do2 utility managed by the second digital output (relay K2) do3 utility managed by the third digital output (relay K3) To modify the utility managed by an output:

press the lower part of the display will show the correspondina value.

The meaning of the values is the following

The meaning of the values is the following.					
VALUE	MEANING				
0	not used				
1	top				
2	floor				
3 airhole					
4 steam injection					
5 alarm					
6	chamber light				
7	cooking timer				
- 8	acoustics				

- press Na or Sy within 15s press Set

To exit the procedure:

press N_∆ and Sy for 4s.

If the instrument code is not set at 0, display only is allowed but not the modification of the value corresponding to the utility managed by the output.

4.4.1 Setting the work set-point (only if functioning with 1 measurement input)

- make sure that the instrument is in on state and that no procedure is in progress
- ullet press ullet : the lower part of the display will show "SP", the upper
- press 3 times or do not operate for 15s: the LED will switchoff, 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 work set-point via the SP parameter

4.4.2 Setting the top set-point and the floor set-point (only if functioning with 2 measurement inputs)

To modify the top set-point:

- make sure that the instrument is in on state and that no procedure is in progress
- \bullet presses : the lower part of the display will show "SP1", the upper part the corresponding value and the LED **W** will flash
- ullet press $\begin{picture}(1,0)\put(0,0){\line(0,0){100}}\put(0,0){\line(0,0$
- press 2 times or do not operate for 15s: the LED **W** will switch-off, after which the instrument will exit the procedure.

To modify the floor set-point:

- press during the modification of the top set-point: the lower part of the display will show "SP2", the upper part the
- press N_{Δ} or N_{Φ} within 15s; see also parameters r7 and r8
- 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).

It is also possible to set the top set-point via parameter SP1 and the floor set-point via parameter SP2.

Setting the power distributed to the top and the power distributed to the floor (only if functioning with 1 measurement input)

To modify the power distributed to the top

- press during the modification of the work set-point: the lower part of the display will show "Po1", the upper part the corresponding value and a proportioned number of bars of the LED will flash
- press N_Δ or ⊗ within 15s; see also parameters c0 and c1
- do not operate for 15s: the LED will switch-off, after which the instrument will exit the procedure.

To modify the power distributed to the floor:

- $\ \ \, \ \ \,$ press the modification of the power distributed to the top: the lower part of the display will show "Po2", the upper part the corresponding value and a proportioned number of bars of the LED will flash
 • press Na or sy within 15s; see also parameters c0 and c1
- 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).

It is also possible to set the power distributed to the top through parameter Po1 and the power distributed to the floor through parameter Po2

4.6 Setting the configuration parameters

To access the procedure:

- make sure that the instrument is in stand-by state and that no procedure is in progress
- press $[\mathbf{v}]_{\Delta}$ and $[\mathbf{v}]_{\nabla}$ for 4s: the upper part of the display will show "**PA**" • press : the lower part of the display will show the correspond-
- ing value • press N or Sy within 15s to set "-19"
- press or do not operate for 15s
- press 📢 and 🖏 for 4s: if functioning with 1 measurement input, the upper part of the display will show "SP"; if functioning with 2 measurement inputs, the upper part of the display will show "SP1".

To select a parameter:

- press | | or | ≤ > √
- To modify a parameter:
- press (the lower part of the display will show the corresponding value
- press 📢 or 📢 within 15s
- press or do not operate for 15s.

To exit the procedure:

 \bullet press $\fbox{|\mathbf{v}|_{\Delta}}$ and $\fbox{\langle}$ for 4s or do not operate for 60s (any modification) tions will be saved).

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

4.7 Restore the default value of the configuration parameters

- make sure that the instrument is in stand-by state and that no procedure is in progress
- press N, and for 4s: the upper part of the display will show "PA"
- press : the lower part of the display will show the corresponding value
- press Na or Sy within 15s to set "**743**" press Na or do not operate for 15s
- press(N_a) and (sy) for 4s: the upper part of the display will show "**Pb**" • press N_a or ⊗_v to select "**dEF**" • press : the lower part of the display will show the correspond-
- ing value
- press Na or Sy within 15s to set "149" press or do not operate for 15s: the upper part of the display will show "dEF" flashing for 4s, after which "dEF" will

switch on • cut the instrument power supply off.

To exit the procedure in advance:

• press N₂ and Sy for 4s during the procedure (i.e. before setting "149": restore will not be carried out).

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

COOKING TIMER

Preliminary considerations

The cooking timer allows to start the reverse count of a time. The count is shown in the lower part of the display; during the count

the "timer" LED is on and the timer output is activated. Before conclusion of the count (of the time established with parameter c9) the buzzer and the acoustic output are activated, for the time estab-

lished with parameter c4. Before conclusion of the count (of the time established with parameter c5) the airhole is activated, for the time established with parameter c6. Using the multifunction input, it is also possible to start/interrupt the

cooking timer in remote mode.

- 5.2 Setting the cooking timer • make sure that the instrument is in the on state, that the cooking timer
- count is not in progress and that no procedure is in progress • press and and the lower part of the display will show the value of the cooking timer; the left part and the "timer" LED will flash.

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

- To modify the hour:
- press state or sy within 15s sy press the right part will flash.

To modify the minutes:

press () or (≤) within 15s.

The cooking timer can be set between 00:00 and 24:00 h:min.

 \bullet press $\begin{tabular}{l} \end{tabular}$: the "timer" 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).

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.

5.3 Starting the cooking timer

- \bullet press $\boxed{\mbox{$\mathbb{O}$}_{0}}$ during timer setting: the "timer" LED will switch on. Alternatively:
- make sure that the instrument is in on state and that no procedure is in progress
- press \bigcirc_{III} : the "**timer**" LED will switch on.

Interrupting the cooking timer

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

STEAM INJECTION

6.1 Preliminary considerations

The functioning mode of the steam injection depends on parameter t0. 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 sy key in remote mode.

If the steam injection is not managed by any digital output, pressing the $\text{\tiny \bf sy}_{\overline{\mbox{\tiny \bf d}}}$ 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 $\underbrace{\mathbf{m}}_{\underline{\omega}}$ and $\underbrace{\mathbf{s}}_{\underline{v}}$: the upper part of the display will show " $\mathbf{t}\mathbf{2}$ ", the lower part the corresponding value and the LED 쵫 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 N_a or ⊕ within 15s
 press .: the LED ⊕ will switch-off, after which the instrument will

 wit the recordure. exit the procedure.

To exit the procedure in advance

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

Activation of the injector in manual mode (only if 6.3 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
- \blacksquare press $\textcircled{\$}_{\triangledown}$: 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).

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 $\,$
- \bullet in manual mode, by pressing the $\begin{picture}(1,0) \put(0,0){\line(0,0){100}} \put(0,0){\lin$ with parameter c7

If the airhole is not managed by any digital output, pressing the $[i]_{a}$ key will cause the display of the "**no**" indication for 1s in the lower part of the display

Quick setting of the parameter c7

- make sure that the instrument is in on state and that no procedure is in progress
- press \mathfrak{m} and \mathfrak{l} : the upper part of the display will show " $\mathfrak{c7}$ ", the lower part the corresponding value; the left part and the LED 🔪 will flash.

The parameter c7 is visualised in th e minutes:seconds format To modify the minutes

- press(| x |_△) or (≤) within 15s
- press the right part will flash.

 To modify the seconds:

press | n 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 ${\color{red}\bullet}$ press ${\color{red}\bullet}$: the LED ${\color{red}\backslash}$ 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[N_k]: the LED | will switch on and the airhole will be activated, both for the time established with parameter c7.

Deactivation of the airhole in manual mode

- make sure no procedure is in progress
- press Na : 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 model.

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

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 (a) 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 set for 1s.

SIGNALS

9.1 Signals

LED MEANING

₩ top and floor LED

if it is on, the to 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)



- 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
- 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

- 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)

degrees Celsius LED

if it is on, the unit of measurement of the temperatures will be degrees Celsius (parameterP2)

degrees Fahrenheit LED

if it is on, the unit of measurement of the temperatures will be degrees Fahrenheit (parameter P2)

on/stand-by LED (1)

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: • 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-point LED set

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

- the quantity displayed by the lower part of the display will be the top set-point value
- the quantity displayed by the lower part of the display will be the floor set-point value

10 INDICATIONS

10.1 Indications

INDICAL.	MEANING
F-F	alternately to the quantity established with parameter P5:
	the rapid heating function will be in progress (only if func-
	tioning with 1 measurement input)

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 the function requested is not managed by any digital output no

1 1

1 AL	ARMS
1.1 Al	arms
CODE	MEANING
AL	chamber temperature alarm (only if functioning with
	measurement input)
	Remedies:
	■ check the chamber temperature
	see parameters A1 and A3
	Consequences:

• the acoustics output and the buzzer output will be activated.

the alarm output will be activated

- top temperature alarm (only if functioning with 2 measurement inputs) Remedies:
 - check the top temperature
 - see parameters A1 and A3

Consequences:

- the alarm output will be activated
- the acoustics output and the buzzer output will be acti-
- AL2 floor temperature alarm (only if functioning with 2 measurement inputs)
 - Remedies: • check the floor temperature
 - see parameters A5 and A7
 - Consequences
 - 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:
 - press a key to restore the normal display
 - check the causes that brought about the power supply cut-off

Main consequences:

- 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.

INTERNAL DIAGNOSTICS

12.1 Internal diagnostics CODE MEANING

If functioning with 1 measurement input: chamber probe error Remedies:

- see parameter P0
- check probe integrity
- check the instrument-probe connection
- check the chamber temperature

Main consequences

- 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

- the same as the previous case but relative to the top probe Main consequences:
- the top output will be deactivated
- the acoustics output and the buzzer output will be activated

floor probe error (only if functioning with 2 measurement inputs) Remedies

• the same as the previous case but relative to the floor probe

- Main consequences:
- the floor output will be deactivated • the acoustics output and the buzzer output will be acti-

vated When the causes of the alarm have disappeared, the instrument will

go back to normal functioning **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,

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 measure-

ment 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 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 Ithrough a serial interface, via TTL, with MODBUS communication protocol) or with the programming key.

14 WORK SET-POINT, POWER DISTRIBUTED AND CONFIGURATION PARAMETERS

14				MEK DIZIKIB	OTED AND C	ONFIGURATION PARAMETERS
		set-poi				
	MIN.	MAX.	U.M.	1 INPUT	2 INPUTS	WORK SET-POINT
	r 1	r2	°C/°F (1)	150	not visible	work set-point
	r 1	r2	°C/°F (1)	not visible	150	top set-point
	r7	r8	°C/°F (1)	not visible	150	floor set-point
14.2	Power	distrib	uted			
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	Confic		n parame	ters		
PARAM.		MAX.	U.M.	1 INPUT	2 INPUTS	WORK SET-POINT
SP	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
PARAM.		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
						U = K
P2	0	1		0	0	
PZ	0			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				1 = with 1 measurement input, work set-point; with 2 measurement inputs, top set-point
		1				2 = temperature of the floor
						2 = temperature of the moor
P6	0	(4)		2	2	quantity shown by the lower part of the display during the on state or during normal functioning
. 0	ľ	[17]			-	
		1				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
r 1	0	r2	°C/°F(1)	50	50	with 1 measurement input, minimum work set-point; with 2 measurement inputs, top minimum set-point
	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
						·
	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
						$1 = \underline{YES}$ - 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
						$1 = \underline{YES}$ - 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
tO	0	1		0	0	steam injection functioning mode
	"	1				0 = pressing the solar 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
c 0	0	2		0	not visible	restraint between the power distributed to the top and power distributed to the floor
						0 = no restraint
		1				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
		005				sum of the two percentages is always 100
c 1	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)
		1				2 = pass from the stand-by state to the on state
						3 = press [max] 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 - c.3")
c4	-1	120	S 1 (1)	15	15	duration of buzzer activation and of the acoustic output on conclusion of the cooking timer count; see also c9 (6) (7)
C 1	'	120	ľ	'	'	
- F	l .	4.0	lmir-	30	30	-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
с7	00:00	60:00	min:s	00:30	00:30	duration of the activation of the airhole in manual mode
с9	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
A 1	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, tempera
			'''			ture 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	
Λ3	ا ^ن	\ ²		"	"	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)
		1				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				1 = absolute (i.e. A4)
		1				
	I	1	1	1	1	2 = relative to the floor set-point (i.e. "floor set-point + A4")

D. D. L. L.	1	Leave	1		l a williams	District this inc
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 = START/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 = <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:
						• 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)
i 6	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)	-1			lanands on nar		

- the unit of measurement depends on parameter P2
 - set the parameters relative to the regulators appropriately after modification of parameter P2
- the value depends on the type of functioning (1 with 1 measurement input and 3 with 2 measurement inputs)
 - the value depends on the type of functioning (2 with 1 measurement input and 4 with 2 measurement inputs)
- (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
- 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
- the parameter differential is 10 °C/18 °F
- (9)