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EV9336 Digital controller with 6 outputs for electric bread ovens, with RTC functions, programmed switchon, cooking timer, economy, rapid heating and programs management functions

## (GB) ENGLISH

IMPORTANT
1.1 Important

Read these instructions carefully before installation and use and follow all warnings regarding installation and for the electric connection. Keep these instructions with the instrument for future reference.
 The instrument must be disposed of in compliance with local Standards relative to the collection of electrical and electronic appliances.
1.2 Dimensions and installation

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


| DIMENS. | MINIMUM | TYPICAL | MAXIMUM |
| :---: | :---: | :---: | :---: |
| A | $92.0(3.622)$ | $92.0(3.622)$ | $92.8(3.653)$ |
| B | $92.0(3.622)$ | $92.0(3.622)$ | $92.8(3.653)$ |

Installation recommendations:

- the thickness of the panel must not exceed $4.0 \mathrm{~mm}(0.157 \mathrm{in})$ - 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 communication port with the supervising system (through a serial interface, via TTL, with MODBUS communication protocol) or with the programming key; the port must not be used for two purposes at the same time.


Recommendations for the electric connection:

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


## Evco sales network

## 2 PRELIMINARY CONSIDERATIONS

2.1 Preliminary considerations

The instrument can be configured to function with 1 measurement input (chamber probe) or with 2 measurement inputs (top probe and floor probe). If functioning with 1 measurement input it is however possible to enable a second probe (steam probe) to subordinate the injection of steam at the temperature of the same.
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.
The utilities managed by the digital outputs (i.e. relays K1 ... K6) are the following

| RELAY | MANAGED UTILITY |
| :---: | :--- |
| K1 | top |
| K2 | floor |
| K3 | can be set (default chamber light) |
| K4 | airhole |
| K5 | steam injection |
| K6 | can be set (default steam generator) |

To set the type of functioning (with 1 measurement input rather than 2) see paragraph 4.1. However, to set the utility managed by relay K3 and relay K6 see paragraph 4.2.

### 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 cl 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 ro.
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 cl 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 ro.
If functioning with 2 measurement inputs:
- the output activity depends mainly on the floor temperature (floor probe), the floor set-point and parameter r6


## Chamber light.

The output is activated in manual mode.
Through the multifunction input it is also possible to activate the output in remote mode.
Airhole.
The output is activated in the following conditions:

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

Steam injection.
The output activity depends mainly on parameter to.
Through the multifunction input it is also possible to activate the output in remote mode.
Steam generator.
If functioning with 1 measurement input:

- if the steam probe is not enabled, the output is activated in manual mode
- if the steam probe is enabled, the output is enabled in manual mode, after which the activity of the same will depend on the temperature of the steam (steam probe), the steam set-point and parameter $t 3$. If functioning with 2 measurement inputs, the output is activated in manual mode.
Alarm.
The output is activated during a temperature alarm.
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 (9), for the time established with parameter c4
- during an alarm or an error, with continuous contribution.

On/Stand-by.
The output is activated during the "on" state (see paragraph 3.1).
In spite of the fact that the instrument can manage the 10 utilities stated in this paragraph, there are 6 digital outputs available. Make sure that the desired utility is managed by the instrument (see paragraph 2.1).

## 3 USER INTERFACE

3.1 Preliminary considerations

The following functioning states exist:

- the "on" state (the instrument is powered and on: the regulators can be on)
- the "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)
- the "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)
" 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.


### 3.2 Selecting the functioning state

To pass from the stand-by state to the on state (and vice versa): - make sure no procedure is in progress

- press $0_{0}$ for 1 s .

To pass from the programmed switch-on state to the on state. - make sure no procedure is in progress

- press $\overbrace{0}$ for $1 s$.

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

- make sure no procedure is in progress
- press $\longdiv { O _ { 0 } }$ and $\widehat{\sigma_{\text {雨 }}}$ for 1 s .

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

- make sure no procedure is in progress
- press $\widehat{0_{0}}$ and $\widehat{\Theta_{\text {雨 }}}$ for 1 s .

Through the on/stand-by input it is also possible to pass from the on state (or from the programmed switch-on state) to the stand-by state in remote mode.

To pass from the on state（or the programmed switch－on state）to the stand－by state in remote mode：
－activate the on／stand－by input（the instrument remains in the stand－ by state for the entire duration of input activation）．
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 programmed switch－on state）by press－ ing the keys．

## 3．3 The display

If functioning with 1 measurement input，if the instrument is in the on state：
－the upper part of the display will show the quantity established with parameter P5：
if P5 $=0$ ，the display will show the chamber temperature
if P5＝1，the display will show the work set－point
the lower part of the display will show the size established with parameter P6：
if P6 $=0$ ，the display will show the chamber temperature
if P6 $=1$ ，the display will show the work set－point（in this case the ＂set＂LED will be on）
if P6＝2，the display will show the value of the cooking timer or its count if the timer is active（in this case the＂timer＂LED will be on）；the value of the cooking timer is displayed in the hours：minutes format． if $\mathrm{P6}=3$ ，the display will show the day and real time（in this case the ＂clock＂LED will be on）；the day is displayed in format 1 ．．． 7 （number 1 corresponds to Monday），the real time in the 24 h format．
See also paragraphs 3.5 and 3．7．
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 day and real time（in this case the＂clock＂ LED will be on）；the day is displayed in format 1 ．．． 7 （number 1 corre－ sponds to Monday），the real time in the 24 h format
if P6 $=4$ ，the display will show the floor temperature
if P6＝5，the display will show the floor set－point（in this case the＂set＂ LED and the＂2＂LED will be on）．
See also paragraphs 3.5 and 3．7．
If the instrument is in the programmed switch－on state：
－the upper part of the display will show the program label that will be started on programmed switch－on of the instrument lif no pro－ gram start is envisioned，the upper part of the display will show ＂P－＂）
the lower part of the display will show the day and time of the next switch－on；the day is displayed in format 1 ．．． 7 （number 1 corre－ sponds to Monday），the real time in 24 h format（if switch－on is not programmed，the lower part of the display will show＂－－：－－＂）
－the＂delay＂LED will be on
－the LED（1）will be on．
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 if parameter c8 is set at 0
it will display the real time if parameter c8 is set at 1 （in this case the ＂clock＂LED will be on）；the real time is displayed in 24 h format －the LED（1）will be on．
3．4 Temporary setting of the quantity shown by the upper part of the display during the on state
－make sure no procedure is in progress
－press $\sqrt{\|}$ and $\circlearrowleft_{\omega}$ for 1 s several times：the upper part of the display will show one of the labels given in the tables in paragraph 3.5 for 2 secs，after which it will show the corresponding value
Any power supply cut－off causes the display of the quantity estab－ lished with parameter P5 to be restored．
3．5 Learning the quantity shown by the upper part of the display during the on state
－make sure no procedure is in progress
－press $\sqrt{\mid N_{\Delta}}$ and $\Psi_{\omega}$ ：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 |
| :---: | :--- |
| $\mathbf{P b}$ | chamber temperature |
| $\mathbf{S P}$ | work set－point |
| $\mathbf{P b S}$ | steam temperature |
| f |  |

If the steam probe is not enabled（parameter P4＝0），the＂PbS＂label will not be displayed．

If functioning with 2 measurement inputs，the upper part of the dis－ play will show one of the labels given in the following table for 2 seconds：

\section*{| LABEL | MEANING |
| :---: | :--- |
| $\mathbf{P b 1}$ | temperature of the top |
| $\mathbf{S P 1}$ | top set－point |
| $\mathbf{P b 2}$ | temperature of the floor |
| $\mathbf{S P 2}$ |  | <br> P2 floor set－point}

3．6 Temporary setting of the quantity shown by the lower part of the display during the on state
－make sure no procedure is in progress
－press $\oiint_{\nabla}$ and $\circlearrowleft_{0}$ for 1 s several times：the lower part of the display will show one of the labels given in the tables in paragraph 3.7 for 2 secs，after which it will show the corresponding value．
Any power supply cut－off causes the display of the quantity estab－ lished with parameter P6 to be restored．

## 3．7 Learning the quantity shown by the lower part of

 the display during the on state－make sure no procedure is in progress
－press $\xi_{\bar{\theta}}$ and $\circlearrowleft_{0}$ ：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

| $\mathbf{P b}$ | temperature of the floor |
| :---: | :--- |
| $\mathbf{S P}$ | top set－point |
| $\mathbf{t i n e}$ | value of the cooking timer or its count if the timer is active |
| $\mathbf{r t c}$ | day and real time | PbS steam temperature

If the steam probe is not enabled（parameter P4＝0），the＂PbS＂label will not be displayed．
if functioning with 2 measurement inputs，the lower part of the dis－
play will show one of the labels given in the following table for
2 seconds value of the cooking timer or its count if the timer is active：

## LABEL MEANING

| Pb1 | temperature of the top |
| :---: | :--- |
| $\mathbf{S P 1}$ | top set－point |
| $\mathbf{t i n e}$ | value of the cooking timer or its count if the timer is active |
| $\mathbf{r t c}$ | day and real time |
| $\mathbf{P b 2}$ | temperature of the floor |
| $\mathbf{S P 2}$ | floor set－point |

## 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 by pressing the $\sqrt[\text { MiF }]{ }$ 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 1 s 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 caused）．
Pressing the key also causes the deactivation of the acoustic output and the buzzer output．
Using the multifunction input，it is also possible to deactivate the buzzer， the acoustic output and the buzzer output in remote mode．

## 4 SETTINGS

4．1 Setting the type of functioning（with 1 measure－ ment input rather than 2）
To access the procedure：
－make sure that the instrument is in stand－by state and that no proce－ dure is in progress
－press $\|_{\|}$and for 4s：the upper part of the display will show ＂PA＂
－press $\left(\frac{\pi}{4}\right.$ ． ing value

－press
－press $\omega_{\|}$and for 4 s ：the upper part of the display will show ＂ $\mathbf{P b}$＂
To modify the type of functioning：
－press $\pi(x, y)$ ：the lower part of the display will show the correspond－ ing 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 setanctan
To exit the procedure：
－press $\mid \omega_{\Delta}$ and ${\int \$_{\nabla}}^{6}$ for 4 s ．
The modification of the type of functioning does not cause
the default value of the configuration parameters to be
restored but causes the default value of the settings memo－

## rised in the programs to be restored．

4．2 Setting the utility managed by the relay K3 and the relay $\mathbf{K 6}$
To access the procedure：
－make sure that the instrument is in stand－by state and that no proce－ dure is in progress
－press and $\int_{\Delta}$ for 4s：the upper part of the display will show
－press ing value


－press ${ }^{1 / \|_{\Delta}}$ and for 4s：the upper part of the display will show ＂ $\mathbf{P b}$＂

The label meaning is the following：
LABEL MEANING
do3 $\quad$ utility managed by the third digital output（relay K3）
do6 utility managed by the sixth digital output（relay K6）
To modify the utility managed by an output：
－press ing value．
The meaning of the values is the following：

| VALUE | MEANING |
| :---: | :---: |
| 0 |  |


| 0 | not used |
| :---: | :--- |
| 1 | chamber |


| 2 | steam generato |
| :---: | :---: |

3 alarm

| 4 | cooking timer |
| :---: | :--- |
| 5 | acoustics |

6 on／stand－by
－press $\overbrace{\text {－press }}^{5 \|_{\Delta}}$ or within 15 s
－press
To exit the procedure：


## 4．3 Setting the day and the real time

－make sure that the instrument is in stand－by state and that no proce－ dure is in progress
 of the week and the real time；the indication rela－ tive to the day and the＂clock＂LED will flash．
The day is displayed in format 1 ．．． 7 （number 1 corresponds to Mon－ day），the real time in the 24 h format（hours：minutes）．
To modify the day：
－press or $\int_{\square}$ within 15 s
 flash．
To modify the hour：
－press $\sqrt{\mid \sigma_{\Delta}}$ or $\sqrt{5}$ within 15 s
－press
To modify the minutes：
－press $\xlongequal[\mid ⿰ \|_{\Delta}]{ }$ or $\xi_{\nabla}$ within 15 s
－press ${ }^{\text {sta }}$ ：the LED＂clock＂will switch－off，after which the instru－ ment will exit the procedure．
To go back to previous levels：
－press $\mathbb{O}_{\text {国 }}$ several times during the procedure．
To exit the procedure in advance：
－do not operate for 15 s（any modifications will be saved）．
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
－press ${ }^{\boldsymbol{s t h}}$ ：the lower part of the display will show＂SP＂，the upper part the corresponding value and the LED $\mathbf{W} \mathbf{}$ will flash
－press or within 15 s ；see also parameters r1 and r2
－press 3 times or do not operate for 15 s：the LED $\mathbf{W}$ will switch－ off，after which the instrument will exit the procedure．
To exit the procedure in advance：
－do not operate for 15 s （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 $\mathbf{2}$ measurement inputs）
To modify the top set－point：
－make sure that the instrument is in on state and that no procedure is in progress
－press sume ：the lower part of the display will show＂SP＂，the upper part the corresponding value and the LED $\mathbf{W} \mathbf{W}$ will flash
－press $\int_{\|}$or within 15s；see also parameters r1 and r2
－press 2 times or do not operate for 15 s ：the LED $\mathbf{W}$ will switch off，after which the instrument will exit the procedure．
To modify the floor set－point：
－press $\underset{\text { ste }}{\text { sut }}$ during the modification of the top set－point：the lower part of the display will show＂SP2＂，the upper part the corresponding value and the LED $\mathbf{W}$ will flash
－press $\overbrace{\|\left.\right|_{\Delta}}$ or $\approx_{\mathrm{Z}}$ within 15 s；see also parameters r7 and r8
－press sele the LED $\mathbf{W}$ will switch－off，after which the instrument will exit the procedure．
To go back to previous levels：
－press $\underbrace{}_{\text {（⿶凵⿻丅⿵冂⿰⿱丶丶⿱丶丶⿴囗十 }}$ several times during the procedure．
To exit the procedure in advance：
－do not operate for 15 s（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．

## 4．5 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：
 part of the display will show＂Po1＂，the upper part the corresponding value and a proportioned number of bars of the LED $\boldsymbol{F}$ will flash
－press or $\omega_{\Delta}$ within 15 s ；see also parameters CO and Cl
－do not operate for 15 s：the LED will switch－off，after which the
instrument will exit the procedure
To modify the power distributed to the floor：
－press $\sqrt{\pi d x} d$ during 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 or $\|_{\Delta}$ within 15 s ；see also parameters c 0 and cl
－press exit the procedure
To go back to previous levels：

To exit the procedure in advance：
－do not operate for $15 s$（any modifications will be saved）．
It is also possible to set the power distributed to the top through pa－ rameter Pol and the power distributed to the floor through param－ eter Poz

## 4．6 Setting the configuration parameters

To access the procedure：
－make sure that the instrument is in stand－by state and that no proce－ dure is in progress
－press $\|_{\Lambda}$ and $\int_{\mathrm{J}}$ for 4s：the upper part of the display will show＂PA＂ －press $\mathbb{m a x}_{\text {and }}$ ：the lower part of the display will show the correspond－ ing value
－press $\mid \omega_{1}$ or $\Rightarrow y_{0}$ within 15 s to set＂－19＂
－press $\operatorname{sen}_{0}$ or do not operate for 15 s
－press $\omega_{\Delta}$ 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 $\mid \omega_{A}$ or $\xi_{0}$
To modify a parameter
－press ing value
－press $\quad \mathbb{N}_{\Delta}$ or or within 15s
－press $\sqrt{4060}$ or do not operate for 15 s ．
To exit the procedure
－press $\|_{\Delta}$ and $)_{y_{0}}$ for 4 s or do not operate for 60 s lany modifica－ tions will be saved）．
Cut the instrument power supply off after modification of the parameters．
4．7 Restoring the default values（configuration param－ eters and settings memorised in the programs）
－make sure that the instrument is in stand－by state and that no proce－ dure is in progress
－press $\mathbb{N}_{\Delta}$ and $\int_{0}$ for 4s：the upper part of the display will show PA＂
－press $\operatorname{stc}_{\text {ack }}$ ：the lower part of the display will show the correspond－ ing value


－press $\|_{\Delta}$ and $\int_{0}$ for 4s：the upper part of the display will show ＂Pb＂
－press $\|_{N_{\Delta}}$ or $\sigma_{0}$ to select＂dEF＂
－press ing value

 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 $\|_{\Delta}$ and $\approx \xi_{\mathrm{J}}$ for 4 s during the procedure（i．e．before setting
＂149＂：restore will not be carried out）．
Make sure that the default values are appropriate

## 5 PROGRAMMED IGNITION

5．1 Preliminary considerations
Programmed switch－on allows to plan the automatic switch－on of the instrument．
When the instrument is switched－on，it will function with the last set－ tings memorised before passing to the programmed switch－on state （see paragraph 3．2）or with the settings memorised in a program（see paragraph 12．4）．
It is possible to plan 14 switch－on hours，the possible combinations of switch－on days are 12 ．
If there is a power cut at the switch－on time，this will be re－proposed when the power supply is restored．

## 5．2 Setting programmed ignition

## To access the procedure

－make sure that the instrument is in on state and that no procedure is in progress
－press sex and $\mathbf{U}_{0}$ ：the upper part of the display will show＂H01＂ flashing（it is the label of the first switch－on time）， the lower part will show a label relative to a combination of switch－on days and the＂delay＂ LED will flash．

The combination of the switch－on days 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 |

## To select a switch－on time


To select a combination of days to which to apply the selected switch－ on time（in the example，＂H07＂）：
－press $\int_{\text {stax }}^{x}$ during flashing of the upper part of the display：the lower part of the display will show a flashing label relative to a combination of days and the upper part will switch－on
－press $\omega_{\Delta}$ or $\xi_{0}$ within 15 s（e．g．to select＂1－5＂）．
To set the selected switch－on time（in the example＂H07＂）：
－pressmand during flashing of the lower part of the display：the lower part of the display will show the switch－on time；the left part will flash．
The time is displayed in the 24 h format（hours：minutes）
To modify the hour：
－press $\mathbb{N}_{A}$ or $\Rightarrow y_{\mathrm{D}}$ within 15s
－pressmand the right part of the indication relative to the switch－on time will flash．
To modify the minutes：
－press $\|_{A}$ or $\xi_{p_{V}}$ within 15s
－press $s$ mand ：the upper part of the display will show the flashing switch－ on time label again（in the example＂H07＂）and the lower part will show the combination of days again（in the ex－ ample＂1－5＂）．
To set another programmed ignition，repeat the procedure given in this paragraph．
To go back to previous levels：
－press $0_{\text {国 }}$ several times during the procedure．
To exit the procedure：
 switches off．
To exit the procedure in advance：
－pressmad and $\circlearrowleft_{0}$ or do not operate for 15 during the procedure （i．e．before modifying the minutes：any modifi－ cations 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 no procedure is in progress

If the instrument is in the programmed switch－on state：
－the upper part of the display will show the program label that will be started on programmed switch－on of the instrument lif no pro－ gram start is envisioned，the upper part of the display will show ＂ $\mathbf{P}$－＂）
the lower part of the display will show the day and time of the next switch－on；the day is displayed in format $1 \ldots 7$（number 1 corre－ sponds to Monday），the real time in 24 h format（if switch－on is not programmed，the lower part of the display will show＂－－：－－＂）
the＂delay＂LED will be on

## －the LED（1）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
 gram label that will be started on switch－on．The lower part will show the day of the week and time of the next switch－on；the indication relative to the day and the＂delay＂LED will flash．
The day is displayed in format $1 \ldots 7$（number 1 corresponds to Mon－
day），the time in the 24 h format（hours：minutes）．
To modify the day：
－press or $\omega_{\infty}$ within 15s
－press stan ：the left part of the indication relative to the switch－on time will flash．
To modify the hour：
－press $\sqrt[N_{A}]{ }$ or $\Rightarrow_{\Delta}$ within 15s
 time will flash．
To modify the minutes：
－press $\operatorname{NA}_{A}$ or $\approx$ within 15s
－press ：the program label that will be started on switch－on will flash．
To modify the program that will be started on switch－on：
－press $T_{1}$ or ors within 15 s
－press ：the＂delay＂LED will switch on，after which the instru－ ment will exit the procedure．
To go back to previous levels：
－press $\overline{\omega 匕}_{\text {玉ix }}$ several times during the procedure．
To exit the procedure in advance：
 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．
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
 day of the week and the time of the next switch－ on，the＂delay＂LED will flash．
The day is displayed in format 1 ．．． 7 （number 1 corresponds to Mon－ day），the time in the 24 h format．
－press $\sim_{\Delta}$ within 15 s to select another switch－on already pro－ grammed
－press $\sec _{\text {ded }}$ ：the LED＂delay＂will switch on，after which the instru－ ment will exit the procedure．
To exit the procedure in advance：
 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 successive day and time circumstances．
If passing from the programmed switch－on state to any other state，the

## exclusion will not be re－proposed．

## 6 COOKING TIMER

## 6．1 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 LED＂timer＂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．

## 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 that no procedure is in progress
－press $\sqrt{\operatorname{stc}}$ and $\widehat{C l}_{\text {国 }}$ ：the lower part of the display shows 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 or $\int_{5}$ within 15 s
－press ${ }^{\text {sta }}$ ：the right part will flash．
To modify the minutes：
－press $\overparen{|\sim|_{\Delta}}$ or $\xi_{\nabla}$ within 15 s ．
The cooking timer can be set between 00：00 and 24：00 h：min．
＂press $\mathbf{s t h}_{\omega 0}$ ：the LED＂timer＂will switch－off，after which the instru－ ment will exit the procedure．
To go back to previous levels：

To exit the procedure in advance：
－do not operate for 15 s（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 inter－ rupted，the＂timer＂LED will switch－off and the buzzer will be activated for 3 seconds．

## 6．3 Starting the cooking timer

－press $0_{0}$ 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 $0_{\text {凷 }}$ ：the＂timer＂LED will switch on．
6．4 Cooking timer start and switch－off of the instru－ ment on conclusion of the count
－make sure that the instrument is in on state and that no procedure is in progress
 flash；the instrument will switch－off when the count has been concluded．
6．5 Interrupting the cooking timer
 activated for 3 s ．

## 7 STEAM GENERATOR

## 7．1 Preliminary considerations

The steam generator allows to subordinate the steam injection to its own state．
If functioning with 1 measurement input，if the steam probe is not enabled，pressing the MiF and $\$_{0}$ keys for 1 s will cause the steam generator to switch on and successive pressing causes its switch－off． Steam injection is allowed on condition that the steam generator is on． If functioning with 1 measurement input，if the steam probe is not enabled，pressing the mif and keys for 1 s will enable the steam generator，after which the activity of the same will depend on the temperature of the steam（steam probe），the steam set－point and pa－ rameter $t 3$（successive pressing of the keys causes the steam generator to be disabled）．Steam injection is allowed on condition that the tem－ perature of the steam is above that established with the steam set－point or at minimum．Once the steam set－point has been reached，above the ＂steam set－point－t4＂．
If functioning with 2 measurement inputs，pressing the $\sqrt{\text { MiF }}$ and $\xi_{\mathrm{F}}$ keys for $1 s$ will cause the steam generator to switch on and successive pressing causes its switch－off．Steam injection is allowed on condition that the steam generator is on．
If the steam generator is not managed by any digital output，pressing the MiF and $\xi_{\mathrm{D}}$ keys will cause the display of the＂no＂indication for Is in the lower part of the display．In this case steam injection is always allowed．

## 8 STEAM INJECTION

## $\mathbf{8 . 1}$ Preliminary considerations

The functioning mode of the steam injection depends on param－ eter t 0 ．
If the parameter $t 0$ is set at 0 ，pressing the $\approx$ 污 key causes the injection of steam for the time established with parameter t 2 or for the entire duration that the key is pressed．The parameter tl establishes the mini－ mum time that can pass between the two successive injections．
If the parameter to is set at 1 ，pressing the $\widetilde{\approx 3>}$ key will enable the automatic injection of the steam（in cyclical mode：parameter t2 estab－ lishes the duration of the injector switch－on and parameter t1 estab－ lishes the duration of switch－off）．
Using the multifunction input，it is also possible to cause the same effect by pressing the son key in remote mode．
Steam injection is subordinate to the steam generator state（see para－ graph 7．1）．
8．2 Quick setting of the parameter $\mathbf{t 2}$
－make sure that the instrument is in on state and that no procedure is in progress
 lower part the corresponding value and the LED 웡 will flash．
The parameter t2 can be set between 1 and 250 ds ．

 exit the procedure．
To exit the procedure in advance
－do not operate for 15 s （any modifications will be saved）．
8．3 Activation of the injector in manual mode fonly if parameter to is set at 0 ）
－make sure that the instrument is in on state and that no procedure is in progress
－press $=झ_{0}$ ：the LED will switch－on and the injector will be acti－ vated，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．
8．4 Enabling of automatic steam injection（only if pa－ rameter $\mathbf{t 0}$ is set at 1 ）
－make sure that the instrument is in on state and that no procedure is in progress
－press $\$_{\mathrm{o}}$ ：the LED will switch on and the injector will be acti－ vated in cyclical mode according to that established with parameters $\mathrm{t1}$ and $\mathrm{t2}$（until the key is pressed again）．

## 9 AIRHOLE

## 9．1 Preliminary considerations

The airhole is activated in the following conditions
－before the conclusion of the cooking timer count（of the time estab－ lished with the parameter c5），for the time established with param－ eter c6
－in manual mode，by pressing the $\sqrt{|N| A}$ key for the time established with parameter c7．

## 9．2 Quick setting of the parameter c7

## make sure that the instrument is in on state and that no procedure is

 in progress－press $\operatorname{sect}_{\Delta \times 0}$ and $\|_{\Delta}$ ：the upper part of the display will show＂c7＂，the lower part the corresponding value the left part and the LED $\mid$｜will flash．
The parameter c7 is visualised in the minutes：seconds format． To modify the minutes：
－press $\sqrt{\omega_{\Delta}}$ or $\overbrace{\mathrm{D}}$ within 15s

To modify the seconds：
－press $\sqrt{\left|\|_{\Delta}\right|}$ or $\xi_{0}$ within 15 s ．
The parameter c7 can be set between 00：00 and 60：00 min：s
－press $\sqrt{\sec / 40)}$ ：the LED｜／will switch－off，after which the instrument will exit the procedure．
To go back to previous levels：
－press $\widehat{\text { © }}$ 国 $^{\text {several }}$ times during the procedure．

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

## 9．3 Activation of the airhole in manual mode

－make sure that the instrument is in on state and that no procedure is in progress
－press $\|_{\Delta}$ ：the LED $\mid$ will switch on and the airhole will be acti－ vated，both for the time established with parameter c7．
9．4 Deactivation of the airhole in manual mode
－make sure no procedure is in progress
－press $/ \|_{\Delta}$ ：the LED $\mid$｜will switch－off．

## 10 ECONOMY

$\mathbf{1 0 . 1}$ Preliminary considerations
The economy allows to reduce the power supplied to the top and the power supplied to the floor by switching an output on when the other is off．
If functioning with 1 measurement input，when the function is in progress the top output and the floor output are switched on for half of the duration of the switch－on set using the procedure given in paragraph 4.5 （intended as a percentage of the time established with parameter C1）．
If functioning with 2 measurement inputs，when the function is in progress，the top output and the floor output are switched－on alter－ nately for half the time established with parameter c1．
When the time established with parameter c10 has passed，the func－ tion is interrupted．
Through the multifunction input it is also possible to activate the economy function in remote mode．
If the rapid heating function is in progress，the economy function cannot be activated

## 10．2 Economy activation

－make sure that the instrument is in the on state，that no procedure is in progress and no rapid heating function is in progress
－press MiF and $\Theta_{0}$ for 1 s ．
When the function is in progress the LED（1）will flash for 1 s every 4 s ．
10．3 Economy interruption in manual mode
－make sure no procedure is in progress

## －press MiF and $\circlearrowleft_{0}$ for 1 s ．

11 RAPID HEATING（only if functioning with 1 meas－ urement input）

## 11．1 Preliminary considerations

The rapid heating allows to reach the work set－point as quickly as possible，supplying 100\％of the power both to the top and the floor （i．e．excluding switch－on of the top and floor outputs in a cyclical way with benefit to switch－on in continuous mode）．
When the temperature of the chamber reaches the＂work set－point temperature established with parameter $c 3$＂value，the function is in－ terrupted．
If the economy function is in progress，the rapid heating cannot be activated．

## 11．2 Rapid heating activation

－causes the event established with parameter c2：
if $\mathrm{c} 2=1$ ，press ster 1 s （make sure that the instrument is in the on state，that no procedure is in progress and the economy function is not is progress）
if c2 $=2$ ，pass from the stand－by state（or from the programmed switch－on state）to the on state
if $\mathrm{c} 2=3$ ，press $\sqrt{\text { sta }}$ ．for 1 s （make sure that the instrument is in the on state，that no procedure is in progress and the economy function is not is progress）or pass from the stand－by state（or programmed switch－on state）to the on state．
If parameter $c 2$ 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．
11．3 Interruption of rapid heating in manual mode －make sure no procedure is in progress

## \section*{press $\operatorname{mat}_{400}$ for 1 s} <br> 12 PROGRAMS MANAGEMENT

## 12．1 Preliminary considerations

The programs allow to memorise some settings．
On program start－up the instrument will function with the settings it has memorised．
If functioning with 1 measurement input the instrument memorises the following settings：
－work set－point（default $150^{\circ} \mathrm{C} / /^{\circ} \mathrm{F}$ ）
－power distributed to the top（default $50 \%$ ）
－power distributed to the floor（default $50 \%$ ）
－cooker timer（default 00：00 h：min）
－parameter t2（default 10 ds ）
－parameter c7（default 00：30 min：s）．
If functioning with 2 measurement input the instrument memorises the following settings：
－top set－point（default $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$ ）
－floor set－point（default $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$ ）
－cooker timer（default 00：00 h：min）
－parameter t2（default 10 ds ）
－parameter c7（default 00：30 min：s）．
Up to 10 programs can be memorised．
The programs can be started in manual mode or on programmed switch－on of the instrument（see chapter 5）．
The modification of the settings memorised in a program during the execution of the same is not re－proposed on the successive start－up of the same program．

12．2 Memorising a program
To access the procedure
－make sure that the instrument is in the on state，that no program is in execution and that no procedure is in progress
－press $\underbrace{\text { MiF }}$ and $\sqrt{\Theta_{\text {国 }}}$ ：the lower part of the display will show＂PrOG＂ and＂ $\mathbf{0}$＂（it is the label of the first program）．
The label meaning is the following．

| LABEL | MEANING |
| :---: | :---: |
| 0 |  |


| 0 | first program |
| :---: | :--- |
| $1 \ldots 8$ | second $\ldots$ ninth program |


| 9 | tenth program |
| :---: | :---: |

no program used
To select a program：

To modify the settings：
－operate as indicated in the respective procedure，i．e．：
－operate as indicated in the procedure given in paragraph 4．4．1 to modify the work set－point
operate as indicated in the procedure given in paragraph 4．4．2 to modify the top set－point and the floor set－point
－operate as indicated in the procedure given in paragraph 4.5 to modify the power distributed to the top and the power distributed to the floor
operate as indicated in the procedure given in paragraph 6.2 to modify the cooking timer
operate as indicated in the procedure given in paragraph 8.2 to modify the parameter t2
operate as indicated in the procedure given in paragraph 9.2 to modify the parameter c7．
The upper part displays＂Ch＂
To memorise the program：
＂press $\widehat{0_{\text {国 }}}$ for 1 s ：the upper part of the display will show＂Ch＂flash－ ing for 4 s ．The lower part will show＂PrOG＂again and the flashing program label for 4 s （in the example＂ $\mathbf{7}^{\prime \prime}$ ），after which the label will switch－on．
To memorise another program，repeat the procedure given in this paragraph．
To exit the procedure：
－press $\sqrt{\text { MiF }}$ and $\widehat{C}_{\text {国 }}$ or do not operate for 15 s ．
To exit the procedure in advance：
－press $\sqrt{\text { MiF }}$ and $\widehat{\Theta_{\text {国 }}}$ or do not operate for 15 s during the procedure （i．e．before memorising the program：any modi－ fications will not be saved）
12．3 Program start in manual mode
－press $\circlearrowleft_{00}$ during the memorisation of the program．
12．4 Program start on programmed switch－on of the in－ strument
－press $\sqrt{s t \mathrm{tan}}$ before escaping the procedure given in chapter 5 （i．e． after having modified the minutes for example of the switch－ on time＂H07＂of the combination of days＂1－5＂）：the lower part of the display will show＂PrOG＂and＂0＂（it is the label of the first program）．
To select a program：
－press $\sqrt{1 \times \|_{\Delta}}$ or $\sqrt{\xi_{\mathrm{T}}}$ within 15 s （e．g．to select＂ 7 ＂）
To display the information regarding the program：
－press ${ }^{\text {MIF }}$ ：the upper and lower parts of the display will successively show the information，after which the instrument will reset normal display．
If functioning with 1 measurement input，the upper and lower parts of the display will show the following information in succession（for example）：
UPP．PART LOWER PART
7 PrOG（continue ．．．） the program selected
SP 150 （continue ．．．） the value of the work set－point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$
50 （continue ．．．） the value of the power distributed to the top is $50 \%$
Po2 50 （continue ．．．）
the value of the power distributed to the floor is $50 \%$

| tin | $\mathbf{0 0 : 3 0}$ |
| :--- | :--- |
| （continue ．．．） |  |

the cooking timer value is 00：30 h：min
10 （continue ．．．）
parameter t2 value is 10 ds
c7 00：30
parameter c7 value is 00：30 min：s
If functioning with 2 measurement inputs，the upper and lower parts
of the display will show the following information in succession（for example）：
UPP．PART｜LOWER PART

| $\mathbf{7}$ | PrOG（continue ．．．） <br> the program selected |
| :---: | :--- |
| $\mathbf{S P 1}$ | $\mathbf{1 5 0}$（continue ．．．） <br> the value of the top set－point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$ |
| $\mathbf{S P 2}$ | $\mathbf{1 5 0}$（continue ．．．） <br> the value of the floor set－point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$ |
| $\mathbf{t i n}$ | $\mathbf{0 0 : 3 0}$（continue ．．．） <br> the cooking timer value is $00: 30 \mathrm{~h}:$ min |
| $\mathbf{t 2}$ | $\mathbf{1 0}$（continue $\ldots$ ．．． <br> parameter t2 value is 10 ds |
| $\mathbf{c 7}$ | $\mathbf{0 0 : 3 0}$ <br> parameter c7 value is $00: 30 \mathrm{~min}: \mathrm{s}$ |
| The display shows every setting for 1 s. |  |

To escape the succession of settings:

- press MiF

To confirm the selection of the program:
 on time label again (in the example "H07") and the lower part will show the combination of days again (in the example "1-5").
If "-", is selected, on programmed switch-on of the instrument, these will function with the latest settings memorised.
To memorise another program, repeat the procedure given in this paragraph.
To exit the procedure

- press $\sqrt{\text { tradeld }}$ and $\circlearrowleft_{0}$ or do not operate for 15 s : the "delay" LED switches off.
To exit the procedure in advance:
 (i.e. before confirming the selection of the program: any modifications will not be saved).


### 12.5 Interrupting a program

- make sure no procedure is in progress

The instrument will function with the new settings.
12.6 Learning the information regarding the program during the execution of the same
- make sure no procedure is in progress
 successively show the information in succession, after which the instrument will reset normal display.
If functioning with 1 measurement input, the upper and lower parts of the display will show the following information in succession (for example):

| UPP. PART | LOWER PART |
| :--- | :--- |

7 PrOG (continue ...)
the program in execution
150 (continue ...)
the value of the work set-point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$
Po1 50 (continue ...)
the value of the power distributed to the top is $50 \%$
Po2 50 (continue ...)
the value of the power distributed to the floor is $50 \%$
tin 00:30 (continue ...)
the cooking timer value is $00: 30 \mathrm{~h}: \mathrm{min}$
t2 $\mathbf{1 0}$ (continue ...)
parameter t2 value is 10 ds
00:30
parameter c7 value is 00:30 min:s
If functioning with 2 measurement inputs, the upper and lower parts of the display will show the following information in succession (for example):
UPP. PART LOWER PART

## 7 PrOG (continue ...)

the program in execution
SP1 150 (continue ...)
the value of the top set-point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$
SP2 150 (continue ...)
the value of the floor set-point is $150^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}$

## tin 00:30 (continue ...)

the cooking timer value is $00: 30 \mathrm{~h}: \mathrm{min}$
10 (continue ...)
parameter t2 value is 10 ds
c7 00:30
parameter c 7 value is $00: 30 \mathrm{~min}: \mathrm{s}$
The display shows every setting for 1 s .
To escape the succession of settings:

- press $\widetilde{\sigma}_{\text {雨 }}$ and $\circlearrowleft_{0}$

The instrument displays the information memorised in the program and not any modifications made during execution of the same.

## 13 SIGNALS

### 13.1 Signals

## LED MEANIN

W 4 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)
4 power distributed to the floor LED
supplies and indication regarding the power distributed to the floor
If it flashes, the modification of the power distributed to the floor is in progress (with the procedure indicated in paragraph 4.5)
steam injection LED
if it is on:

- and the parameter t0 is set at 0 , steam injection will be in progress
- and the parameter t0 is set at 1 , steam injection will be in enabled
if it flashes:
- rapid setting of parameter t2 is in progress (see paragraph 8.2)
- steam injection will not be available (parameter t4)

N 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 con-
clusion of the cooking timer count (parameter c6)
- rapid setting of parameter c7 is in progress (see paragraph 9.2)
${ }^{\circ} \mathbf{C}$ degrees Celsius LED
if it is on, the unit of measurement of the temperatures will be degrees Celsius (parameter P2)
${ }^{\circ} \mathbf{F}$ degrees Fahrenheit LED
if it is on, the unit of measurement of the temperatures will be degrees Fahrenheit (parameter P2)
(1) on/stand-by LED
if it is on, the instrument is in the programmed switch-on state or in the stand-by state
if it flashes, the cooking timer count is in progress and on conclusion of the count, the instrument will switch-off
if it flashes for 1 s every 4 s , the economy function will be in progress
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
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


## clock

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
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 or the floor set-point
1 - the quantity displayed by the lower part of the display will be the top set-point value
2 - the quantity displayed by the lower part of the display will be the floor set-point value
14 INDICATIONS
14.1 Indications

## INDICAT. |MEANING

$\mathbf{P}$ - $\quad$ the start-up of a program is not envisioned on programmed switch-on of the instrument
$\overline{\mathbf{P} 0 \ldots 9}$ start-up of the program $0 \ldots 9$ is envisioned on programmed switch-on of the instrument
F-F $\quad$ alternately to the quantity established with parameter P5: the rapid heating function will be in progress (only if functioning with 1 measurement input)
decrease the time established with parameter C 9 is missing... 1 second
time to the conclusion of the cooking timer count

00:00 flashing: the cooking timer count has ended
15 ALARMS
15.1 Alarms

## CODE MEANING

AL chamber temperature alarm (only if functioning with 1 measurement input
Remedies:

- check the chamber temperature
- see parameters A1 and A3

Consequences:

- the alarm output will be activated
- the acoustics output and the buzzer output will be activated
AL1 $\quad$ 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 activated
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
id $\quad$ multifunction input alarm (only if the parameter i5 is set at 5 ) Remedies:
- check the causes that brought about the input activation - see parameters i5 and i6

Main consequences:

- the top output will be deactivated
- the floor output will be deactivated
- steam injection will not be available
- 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 with duration shorter than the time established with parameter rl3
Remedies:
- press a key to restore the normal display
- check the causes that brought about the power supply cut-off
Main consequences:
- the count will continue until the instrument is powered - the acoustics output and the buzzer output will be activated
PF2 $\quad$ power supply cut-off alarm during the cooking timer count with duration longer than the time established with parameter rl3
Remedies:
- press a key to restore the normal display
- check the causes that brought about the power supply cut-off
Main consequences:
- the count will be interrupted
- the acoustics output and the buzzer output will be activated
$\overline{\text { When the cause of the alarm disappears, the instrument restores nor- }}$ mal 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.


## 16 INTERNAL DIAGNOSTICS

### 16.1 Internal diagnostics

## CODE MEANING

Pr1 If functioning with 1 measurement input:
chamber probe error
Remedies:

- see parameter PO
- 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
Pr2 If functioning with 1 measurement input:
steam probe error
Remedies:
- the same as the previous case but relative to the steam
probe
Main consequences:
- the steam generator output will be off
- steam injection will not be available
- the acoustics output and the buzzer output will be activated
If functioning with 2 measurement inputs:
floor probe error
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
rtc clock error
Remedies:
- set the day and real time again

Main consequences:

- the programmed switch-on will not be available
- the acoustics output and the buzzer output will be activated
$\overline{\text { When the cause of the alarm disappears the instrument restores nor- }}$ mal functioning, except for clock error (code "rtc") that requires the day and real time to be set.


## 17 TECHNICAL DATA

17.1 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 $55^{\circ} \mathrm{C}$ (from 32 to $131^{\circ} \mathrm{F}$, $10 \ldots 90 \%$ relative humidity without condensate)
Power supply: 115 ... $230 \mathrm{VAC}, 50 / 60 \mathrm{~Hz}, 5 \mathrm{VA}$ (approx) or 24 VAC , $50 / 60 \mathrm{~Hz}$.
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: can be configured
1 (chamber probe) for J/K thermocouple if functioning with 1 measurement input; second input (steam probe) for J/K thermocouple

- 2 (top probe and floor probe) for J/K thermocouple if functioning with 2 measurement inputs
Digital inputs: 2 inputs:
- on/stand-by input in high voltage ( 230 VAC ) with configurable polarity
multifunction input, for NO/NC contact (poten-tial-free contact, 5 V 1 mA )
Range of measurement: from -99 to $800^{\circ} \mathrm{C}$ (from -99 to $999^{\circ} \mathrm{F}$ ) for J thermocouple, from -99 to $999^{\circ} \mathrm{C}$ (from -99 to $999^{\circ} \mathrm{F}$ ) for K thermocouple.
Resolution: $1^{\circ} \mathrm{C} / 1^{\circ} \mathrm{F}$
Digital outputs: 6 relays:
- top (relay K1): 8 A res. © 250 VAC (NO)
- floor (relay K2): 8 A res. @ 250 VAC (NO)
- utility that can be set (relay K3): 8 A res. © 250 VAC (contact in exchange)
- airhole (relay K4): 8 A res. @ 250 VAC (NO contact)
- steam injection (relay K5): 8 A res. © 250 VAC (NO contact)
- utility that can be set (relay K6): 8 A res. (3) 250 VAC (contact in exchange)

The maximum current accepted on clamp 23 is 10 A
To set the utility managed by relay $K 3$ and relay $K 6$, see paragraph 4.2. Other outputs: buzzer output ( $12 \mathrm{~V}, \max .20 \mathrm{~mA}$ ); 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.

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18 WORK SET-POINT, POWER DISTRIBUTED AND CONFIGURATION PARAMETERS

### 18.1 Work set-point

|  | MIN. | MAX. | U.M. | 1 INPUT | 2 INPUTS | WORK SET-POINT |
| :--- | :--- | :--- | :---: | :---: | :---: | :---: |
|  | r 1 | r 2 | $0^{\circ} C^{\circ} \mathrm{F}(1)$ | 150 | not visible | work set-point |
|  | r 1 | r 2 | $0^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 150 | top set-point |
|  | r 7 | r 8 | $1^{\circ} \mathrm{C}^{\circ} \mathrm{F}(1)$ | not visible | 150 | floor set-point |

### 18.2 Power distributed

| PARAM | MIN. | MAX. | U.M. |  |
| :--- | :--- | :--- | :--- | :--- |
|  | 0 | 100 | $\%$ |  |
|  | 0 | 100 | $\%$ |  |
| $\mathbf{1 8 . 3}$ | Configuration parameters |  |  |  |


| PARAM. | MIN. | MAX. | U.m. | 1 INPUT | 2 Inputs | WORK SET-POINT |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SP | r 1 | r2 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 150 | not visible | work set-point |
| SPS | 0 | 999 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 100 | not visible | steam set-point |
| SP1 | r 1 | r2 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 150 | top set-point |
| SP2 | r7 | r8 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 150 | floor set-point |
| PARAM. | MIN. | MAX. | U.M. | 1 INPUT | 2 InPUTS | POWER DISTRIBUTED |
| Pol | 0 | 100 | \% | 50 | not visible | power distributed to the top (percentage of c 1 ); 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 | $0^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 0 | 0 | with 1 measurement input, chamber probe inset; with 2 measurement inputs, top probe offset |
| CA2 | -25/-50 | 25/50 | $0^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 0 | with 1 measurement input, steam probe inset; with 2 measurement inputs, floor probe offset |
| PO | 0 | 1 | --- | 0 | 0 | $\begin{aligned} & \text { type of probe } \\ & 0=J \\ & 1=K \end{aligned}$ |
| $\overline{P 2}$ | 0 | 1 | --- | 0 | 0 | temperature unit of measurement (2) $\begin{aligned} & 0={ }^{\circ} \mathrm{C} \\ & 1={ }^{\circ} \mathrm{F} \end{aligned}$ |
| P4 | 0 | 1 | --- | 0 | not visible | enabling the steam probe $1 \text { = YES }$ |
| P5 | 0 | (3) | --- | 0 | 0 | ```quantity shown by the upper part of the display during the on state or during normal functioning 0 = with 1 measurement input, chamber temperature; with 2 measurement inputs, top temperature 1 = with 1 measurement input, work set-point; with }2\mathrm{ measurement inputs, top set-point 2 = temperature of the floor 3 = floor set-point``` |
| P6 | 0 | (4) | --- | 2 | 2 | $\begin{aligned} & \text { quantity shown by the lower part of the display during the on state or during normal functioning } \\ & 0=\text { with } 1 \text { measurement input, chamber temperature; with } 2 \text { measurement inputs, top temperature } \\ & 1=\text { with } 1 \text { measurement input, work set-point; with } 2 \text { measurement inputs, top set-point } \\ & 2=\text { value of the cooking timer or its count if the timer is active } \\ & 3=\text { day and real time } \\ & 4=\text { temperature of the floor } \\ & 5=\text { floor set-point } \end{aligned}$ |
| PARAM. | MIN. | MAX. | U.M. | 1 INPUT | 2 InPUTS | MAIN REGULATOR |
| ro | 1 | 99 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 5 | 5 | with 1 measurement input, work set-point differential; with 2 measurement inputs, top set-point differential |
| $r 1$ | 0 | r2 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 50 | 50 | with 1 measurement input, minimum work set-point; with 2 measurement inputs, top minimum set-point |
| r2 | r 1 | 999 | $0^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 350 | 350 | with 1 measurement input, maximum work set-point; with 2 measurement inputs, top maximum set-point |
| r6 | 1 | 99 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 5 | floor set-point differential |
| r7 | 0 | r8 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 50 | minimum floor set-point |
| r8 | r7 | 999 | $0^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 350 | maximum floor set-point |
| $r 12$ | 0 | 1 |  | 0 | 0 | restraint between the top output and the cooking timer $1=$ YES - the top output remains off if the cooking timer count is not in progress |
| $r 13$ | 0 | 240 | min | 240 | 240 | duration of a power supply cut-off duration that occurs during a cooking timer count exceeding which the count is interrupted (5) |
| r14 | 0 | 1 |  | 0 | 0 | restraint between the floor output and the cooking timer $1=$ YES - the floor output remains off if the cooking timer count is not in progress |
| PARAM. | MIN. | MAX. | U.M. | 1 INPUT | 2 InPUTS | STEAM INJECTION |
| to | 0 | 1 |  | 0 | 0 | ```steam injection functioning mode \(0=\) pressing the \(\xlongequal[\Rightarrow y_{0}]{ }\) 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 tl establishes the minimum time that can pass between the two successive injections 1 = pressing the \(\xi_{\mathrm{y}}\) 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 | se to $=0$, minimum time that passes between two successive injections se t0 $=1$, injector switch-off duration |
| t2 | 1 | 250 | ds (7) | 10 | 10 | se t0 $=0$, minimum injection duration se t0 $=1$, injector switch-on duration |
| t3 | 1 | 99 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 5 | not visible | steam set-point differential |
| t4 | 0 | 99 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 50 | not visible | temperature of the steam below which, once the steam set-point has been reached, the steam injection is no longer available (relative to the steam setpoint i.e. "steam set-point - t4") (6) |
| PARAM. | MIN. | MAX. | U.M. | 1 INPUT | 2 InPUTS | VARIOUS |
| co | 0 | ${ }^{2}$ | -- | 0 | not visible | restraint between the power distributed to the top and power distributed to the floor <br> $0=$ no restraint <br> $1=$ the modification of the power supplied to an output automatically causes the supply of the maximum power to the other <br> $2=$ the modification of the power supplied to an output causes an automatic adaptation of the power supplied to the other such to guarantee that the sum of the two percentages is always 100 |
| c1 | 1 | 999 | s | 80 | 80 | with 1 measurement input, cycle time for the top output and floor output switch-on, see also Pol and Po2 with 2 measurement inputs, cycle time for the top output and floor output switch-on, when economy function is in progress (8) |
| c2 | 0 | 3 | -- | 1 | not visible | event that causes the activation of the rapid heating function <br> $0=$ function cannot be activated <br> $1=$ press $\pi$ staid for 1 s (make sure that the instrument is in the on state, that no procedure is in progress and the economy function is not is progress) <br> 2 = to pass from the stand-by state (or the programmed switch-on state) to the on state <br> 3 = press 5 stim 1 s (make sure that the instrument is in the on state, that no procedure is in progress and the economy function is not is progress) or pass from the stand-by state (or the programmed switch-on state) to the on state. |
| c3 | 0 | 99 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 10 | not visible | temperature of the chamber over which the rapid heating function is interrupted (relative to the work set-point i.e. "work set-point - c3") |
| c4 | -1 | 120 | s | 15 | 15 | duration of buzzer activation and of the acoustic output on conclusion of the cooking timer count; see also c9 (9) (10) $-1=$ 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 cb |
| c6 | 0 | 60 | min | 20 | 20 | duration of the activation of the airhole at conclusion of the cooking timer count, see also c5 |
| c7 | 00:00 | 60:00 | min:s | 00:30 | 00:30 | duration of the activation of the airhole in manual mode |
| c8 | 0 | 1 | ---- | 1 | 1 | showing the real time in the lower part of the display during the stand-by state $1=$ YES |
| c9 | 0 | 120 | $s$ | 10 | 10 | time that passes between the activation of the buzzer and the acoustic output and the conclusion of the cooking timer count, see also c4 |
| C10 | 0 | 999 | min | 120 | 120 | maximum duration of the economy function (11) |

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| c12 | 0 | 999 | \|min | 60 | 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. | 1 INPUT | 2 INPUTS | TEMPERATURE ALARMS |
| Al | 0 | 999 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | 0 | 0 | with 1 measurement input, temperature of the chamber above which the chamber temperature alarm is activated; with 2 measurement inputs, temperature of the top above which the top temperature alarm is activated; see also A3 (12) |
| A2 | 0 | 240 | min | 0 | 0 | with 1 measurement input, chamber temperature alarm delay; with 2 measurement inputs, top temperature alarm delay |
| A3 | 0 | 2 | ---- | 0 | 0 | with 1 measurement input, type of chamber temperature alarm delay; with 2 measurement inputs, type of top temperature alarm delay $0=$ no alarm <br> 1 = absolute (i.e. A1) <br> $2=$ with 1 measurement input, relative to the work set-point (i.e. "work set-point $+A 1$ "); with 2 measurement inputs, relative to the top set-point (i.e. "top set-point + A1") |
| A4 | 0 | 999 | ${ }^{\circ} \mathrm{C} /{ }^{\circ} \mathrm{F}(1)$ | not visible | 0 | floor temperature above which the floor temperature alarm is activated, se also A6 (12) |
| A5 | 0 | 240 | min | not visible | 0 | floor temperature alarm delay |
| A6 | 0 | 2 | - | not visible | 0 | $\begin{aligned} & \text { type of floor temperature alarm } \\ & 0=\text { no alarm } \\ & 1=\text { absolute (i.e. A4) } \\ & 2=\text { relative to the floor set-point (i.e. "floor set-point }+ \text { A4") } \end{aligned}$ |
| PARAM | MIN. | MAX. | U.M. | 1 INPUT | 2 INPUTS | DIGITAL INPUTS |
| i1 | 0 | 1 | --- | 0 | 0 | on/stand-by input polarity <br> $0=$ live input active <br> 1 = non-live input active |
| 15 | 0 | 6 | ---- | 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 = CHAMBER LIGHT SWITCH-ON/OFF - the activation of the input will cause the chamber light to switch-on and the successive activation will cause its switch-off 3 = 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) 4 = STEAM INJECTION - in this case: \\ - if \(\mathrm{t} 0=0\), the activation of the input causes the injection of steam for the time established with parameter t 2 or for the entire duration that the key is pressed (parameter t1 establishes the minimum time that can pass between the two successive injections) (13) \\ - 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 tl establishes the duration of switch-off) until the input is activated again (13) \\ \(5=\underline{\text { DOOR MICRO SWITCH }}\) - the activation of the input causes the deactivation of the top output and the floor output, prevents steam injection, displays the flashing "id" code in the upper part of the display and activates the buzzer until the input is deactivated; see also i7 \\ \(6=\underline{\text { START/STOP OF THE ECONOMY FUNCTION }- \text { activation of the input causes the activation of the economy function and successive activation will cause }}\) interruption``` |
| 16 | 0 | 1 | ---- | 0 | 0 | type of contact of the multifunction input $0=$ NO (input active with closed contact) <br> 1 = NC (input active with open contact) |
| i7 | 0 | 120 | min | 0 | 0 | multifunction input alarm signal delay (only if i5 = 5) |
| PARAM. | MIN. | MAX. | U.M. | 1 INPUT | 2 INPUTS | SERIAL NETWORK (MODBUS) |
| LA | 1 | 247 | ---- | 247 | 247 | instrument address |
| Lb | 0 | 3 | -- | 2 | 2 | $\begin{aligned} & \text { baud rate } \\ & 0=2.400 \text { baud } \\ & 1=4.800 \text { baud } \\ & 2=9.600 \text { baud } \\ & 3=19.200 \text { baud } \end{aligned}$ |
| $\overline{L P}$ | 0 | 2 | ---- | 2 | 2 | $\begin{aligned} & \hline \text { parity } \\ & 0=\text { none (no parity) } \\ & 1=\text { odd } \\ & 2=\text { even } \end{aligned}$ |

(2) set the parameters relative to the regulators appropriately after modification of parameter PZ
(3) the value depends on the type of functioning (1 with 1 measurement input and 3 with 2 measurement inputs
(4) the value depends on the type of functioning ( 3 with 1 measurement input and 5 with 2 measurement inputs)
(5) 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
(6) steam injection becomes available again when the temperature of the steam reaches the steam set-point again
(7) ds = tenths of second
(8) the top output and the floor output are switched-on alternately for half of the time established with parameter cl
(9) 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
 of the 00:00 indication will be 3 seconds
 parameter C 10
(12) the parameter differential is $10^{\circ} \mathrm{C} / 18^{\circ} \mathrm{F}$
(13) pressing the $\xi_{\ddagger}^{\infty}$ key causes the associated effect.

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