Controllers for electric ovens

XF330M – XF331M – XF332M

INDEX

1. General Warnings

1.1 Please read before using this manual

- This manual is part of the product and should be kept near the instrument for easy and quick reference.
- The instrument shall not be used for purposes different from those described hereunder. It cannot be used as a safety device.
- Check the application limits before proceeding.
- Dixell Srl reserves the right to change the composition of its products, even without notice, ensuring the same and unchanged functionality.

1.2 Safety Precautions

- Check the supply voltage is correct before connecting the instrument.
- Do not expose to water or moisture: use the controller only within the operating limits avoiding sudden temperature changes with high atmospheric humidity to prevent formation of condensation
- Warning: disconnect all electrical connections before any kind of maintenance.
- The instrument must not be opened.
- In case of failure or faulty operation send the instrument back to the distributor or to "Dixell s.r.l." (see address) with a detailed description of the fault.
- Consider the maximum current which can be applied to each relay (see Technical Data).
- Ensure that the wires for probes, loads and the power supply are separated and far enough from each other, without crossing or intertwining.
- In case of applications in industrial environments, the use of mains filters (our mod. FT1) in parallel with inductive loads could be useful.

2. General description

Models **XF330M, XF331M** and **XR332M**, 72x144 mm format, are microprocessor based controllers suitable for applications on oven with two different heater one on the top and one on the bottom. They are provided with six relay outputs to control heaters, light, extractor, fan, steam heater, steam injection.

It is also provided with two probes configurable as thermocouple J or K and PT100.

The standard "Hot key" output allows the user to programme the parameter list.

3. User interface

3.1 Function of the keys

SET: to set the target set points (ceiling and bottom)

TIMER: to set the length of the cooking cycle

START: to start and stop the cooking

TIME: to set the internal real time clock and the timer for automatic restart of the oven.

DAILY REPETITION: to set the current day and to select the days for the automatic start of the oven

PRG: to set and select the pre-programmed cooking cycles.

EXTRACTOR Switch on and off the steam extractor **(Not present in the XF331M**)

STEAM ENABLING Switch on and off the steam generator relay **(Not present in the XF332M**)

STEAM INJECTION Enables the steam injection

ENERGY SAVING enables the energy saving cycle

LIGHT Switch on and off the light relay

ON/OFF Switch on and off the controller

4. Before starting

4.1 To switch the controller on and off

Push the **ON/OFF** button: if the instrument is on it will be turned off, if it is off it will be switched on.
When the controller is on, it maintains the target set points for ceiling and bottom.

4.2 To set the internal clock

1. Hold pushed for **3s** the TIME  KEY.
2. The minutes of the Time display start flashing. Use the UP and DOWN keys to modify the minutes.
3. Push the TIME key to pass to set the hour (hours start flashing).
4. **TO EXIT:** Push the TIME key of wait for 10s.

4.3 To set the day of the week

1. Push for **3s** the  key.
2. The TIME display shows the current day flashing, with dAy1=Monday, dAy2=Thurday, …, day7=Sunday.
3. Use the **UP** and **DOWN** keys of the TIME display to set the day.
4. Push again the key or wait 10s to exit and confirm the setting.

5. Cooking cycles

5.1 How to set the temperature of ceiling and bottom.

The following procedure can be used during the cooking and when the controller is on.

1. Push the **SET** key**.**
2. The CEILING and BOTTOM displays show the their set point. The LED of the key is turned on.
3. Set the target set points (temperatures) using the **UP** and **DOWN** keys near the displays.
4. Push again the **SET** key or wait 10s to exit and confirm the setting.

NOTE: To change quickly the temperatures hold pressed the **UP** and **DOWN** keys.

5.2 How to set and modify the cooking time

1. Push the **TIMER** key 
2. The TIME display will show the cooking time (hour and minutes). The LED of the key will be turned on.
3. To change the value push **UP** and **DOWN** buttons on the right of the display
4. To memorise the new time push the **TIMER** key again or wait 10s.

NOTE: To change quickly the temperatures hold pressed the **UP** and **DOWN** keys.

5.3 How to start the cooking timer

Push and release **START** key  : the **START** led will be ON.
The TIME display will show the time remaining to the end of the cooking.

5.4 How to stop the cooking timer before the set time has expired.

When the cooking is in progress press and release the **START** key  .
The **TIME** display come bock to show the time. The LED of the **START** key will be turned off.

5.5 End of cooking

When the cooking time has expired, the buzzer starts sounding and the TIME display shows the "**End**" message.

To mute the buzzer push a key.

The TIME display come back to show the time and the LED of the START key is turned off.

6. The automatic starting of the oven

6.1 How to set the time for the automatic starting of the oven

Only when the controller is working, it's possible to set the time of the automatic starting of the oven.

1. Push the TIME key  .
2. The TIME display shows the time of the automatic starting, the minutes are flashing.

3. To set the minutes push the **UP** and **DOWN** keys on the right.
4. Push again the **TIME** key and set the hour using the **UP** and **DOWN** keys on the right.
5. Push again the **TIME** key or wait 10s to exit and confirm the setting.

NOTE: To change quickly the values hold pressed the **UP** and **DOWN** keys.

6.2 How to enable the automatic starting of the oven

The enabling of the automatic starting can be done only when the controller is in standby.

To enable the automatic starting of the oven:

1. Turn off the oven by pressing the **ON/OFF** key.  .
2. Push the **TIME** key  , the TIME display shows for few seconds the starting time and the LED of the key start blinking.
3. After some seconds the TIME display reverts to show the real time.

When the automatic starting is enabled the LED of the TIME key  **flashes.**

NOTE
The automatic starting has to be enabled every time the oven is made in standby mode.

6.3 How to disabled the automatic starting of the oven.

When the automatic start is enabled (led of the TIME key  flashes) push the TIME key.
The LED is turned off and the automatic starting is disabled.

6.4 Selection of the day of the automatic starting of the oven

Only when the controller is working, it's possible to program the automating starting of the oven for the each day of the week.

1. When the oven is on push and release the **DAILY REPETITION** key  .
2. The TIME display shows the dAy1= Monday message. If the led of the **DAILY REPETITION** key is on, it means that the automating starting is enabled for Monday.
3. To enabled or disable the automatic starting push and release the **DAILY REPETITION** key**. The led is turned on and off respectively.**
4. Use the **UP** key to see the other day of the week (day2= Thursday… day7=Sunday) and repeat the operation for enabling or disabling the automatic start.
5. **To exit:** push for 3s the **DAILY** REPETITION key or wait 10s without hitting any keys.

7. The cooking programmes

Up to 9 cooking programmes are available.
For each program can be set:
- Ceiling temperature
- Bottom temperature
- Cooking timer

When the cooking is in progress, a programme can't be selected or modified.

7.1 How to set up a program

7.1.1 When the controller is working

1. Push the **PRG** key  : on the TIME display the label of the Prg1 program is showed and the led of the PRG key is turned on.
2. Select the program using the UP and DOWN keys of the TIME display.
3. Press again the **PRG** key, the led of the **SET** and **TIMER** keys are turned on and the displays show respectively the target set points and the cooking time of the programme.
4. The led of the **PRG** key now is flashing.
5. To change the set points and the cooking time push UP and DOWN buttons on the right of every display
6. Push and release PRG key to confirm.
   THE PROGRAM IS ENABLED and controllers reverts to the standard display.
7. To modified another program repeat the operation starting from the beginning.

7.1.2 When the controller is in stand by

1. Push the **PRG** key  : on the TIME display the label of the Prg1 program is showed and the led of the PRG key is turned on.
2. Select the program using the UP and DOWN keys of the TIME display.
3. Press again the **PRG** key, the led of the **SET** and **TIMER** keys are turned on and the displays show respectively the target set points and the cooking time of the programme. The led of the **PRG** key now is flashing.
4. To change the set points and the cooking time push UP and DOWN buttons on the right of every display
5. Push and release PRG key to confirm.
6. The program is momorized and the label of the following program is displayed.
7. To modified it repeat the operation starting from point 3.

7.2 How to enable a programme

1. Push the **PRG key**  : the TIME display will show Prg1 label and the LED of the PRG key will be turned on.
2. Browse the programmes by pushing UP and DOWN keys on the right of the timer display
3. **Confirm** the program pushing again the **PRG** key. The LEDs of the **SET** and **TIMER** keys are turned on and the displays show respectively the target set points and the cooking time of the programme.

How to disabled the current programme

1. When the LED is on, push the **PRG** key.
2. To stop the programme in progress, push the **START** key till its LED is turned off, then repeat the operation described at point 1.

7.3 How to start the current program

After selecting a programme (the PRG LED is on), push the START key to start the cooking cycle.

8. Steam

8.1 Steam generator (Not present in XF332M)

By pushing the **STEAM** key  the relay of the steam generator is switched. The status of the Generator is monitored by the led: if the led is ON the generator is working, if the LED is off the generator is off.

XF331M: the XF331M is provided with a **digital input working at line voltage (**terminals 21-22) enabling the steam injection. When the steam is not available the LED oft the **STEAM** key  is flashing.

8.2 Steam injection

If the LED oft the **STEAM** key  is on the injection is enabled.

There are **2 kinds of injection cycles**:

- Single cycle
- Repetitive cycle

During the **single cycle** (**ccy=Sin**) the steam output remains on for a certain time settable directly by the keyboard.

During the **repetitive cycle** (**ccy=riP**) the steam output performs 60s cycles. The duty cycle is settable directly by the keyboard.

The steam **injection** is established by the Acy parameter according to the following: :

- **Manual** injection by the key 
- **Automatic** injection

With **manual** injection (**Acy=MAn**) the steam is injected only when the key is pushed.

With **automatic** injection (**Acy=AUt**) the steam is automatically injected at cooking cycle starting.

After a steam injection, an **inhibition time** is started (par. **tCy**) during this period the steam injection is disabled.

8.3 How to set the steam injection time

The steam injection time is settable directly by the keyboard:

The maximum settable injection time depends on the HSi parameter.
With HSi=0 steam is injected as long as the key is pressed.

1. To set the injection time push the **INJECTION** key  for at least 3s.

2. With **single cycle** (**ccy=sin**) the time display shows the duration of the steam injection. Use the UP and DOWN keys to set the value (0÷60s).
3. With **repetitive cycle** (**ccy=riP**) the TIME display shows 4 for digits. The 2 digits on the right indicate the injection time, the 2 digits on the left indicate the time during which the output is off.
   Use the UP and DOWN keys to set the value. The OFF time is **automatically** calculated according to the following formula: 60 – ON TIME.
   ES. The **4020 number** means that the instrument do a injection cycle of 20s and then stays off for 40s.
4. **To exit:** push again the key  or wait the timeout to expire.

NOTE1: The steam injection can be stopped pushing again the INJECTION key  .

NOTE2: Setting the HSi parameter to 0, the steam is injected continuously as long as key is pushed.

NOTE3: If ccY= riP (repetitive cycle) and the inhibition time (TcY) added to the injections time (tco) is grater than 60s, the instrument does cycles with the following period T= tcY + tco, instead of 60s cycles.
It means that he steam is injected for tco seconds and is disabled for tcY seconds.

9. The steam extractor (Not present in XF331M)

The steam extractor can be activated by keyboard or automatically before the end of a cooking cycle.

9.1 How to activate the extractor by means of the keyboard

By pushing the **EXTRACTOR** key  the relay of the extractor is switched. The status of the extractor is monitored by the led: if the led is ON the extractor is working, if the LED is off the extractor is off.

9.2 Automatic activation of the steam extractor before the end of a cooking cycle

The extractor can be activated automatically **some minutes before** the end of a cooking cycle.

To set the time, act as follow:

1. Push the **EXTRACTOR** key  till the time display will show the activation time in the following format: h:mm.
2. Use the UP and DOWN keys to set the value. (0÷1h30m).

5. **To exit:** push again **EXTRACTOR** key  or wait the timeout to expire.

NOTE: By setting the time to 0, only the manual activation is enabled.

10. The fan relay (Only for XF332M)

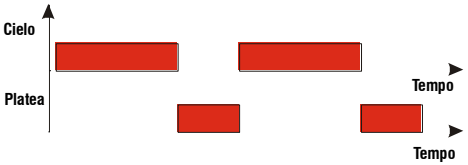
The XF332M is provide with a relay for the fan (terminals 17-18).
The relay is activated when the controller is switched on. During the steam injection the relay is switched off.
After the steam injection it stays off according to the setting of the **tFS** parameters (0÷90m)

11. The Energy Saving function

The Energy Saving function is enabled by pushing the  key. It avoids Ceiling and Bottom outputs from working together. The 2 outputs are switched on alternatively.

The **tcE** and **dcy** parameters control this function:
1. The **tcE** par. (1÷999s) set the Energy Saving **cycle time.**
2. The **dcy** (0÷100) set the **switching on percentage** of the Ceiling output during the Energy Saving cycle.

ES. With Energy Saving function enabled, tcE=100s and dcy=60, when there is a contemporary request of switching on of the ceiling and bottom outputs, the 2 outputs work as explained in the following graph:



If only a output is requested to be switched on, it is switched on for all the time is necessary.

12. Parameters programming

12.1 How to enter the first level menu Pr1 and modify a parameter.

To change the parameter's value operate as follows:

1. Enter the Programming mode by pressing the **PRG+ SET** keys for 3s. The ceiling display shows the label of the first parameters, the bottom display its values.
2. Select the required parameter using "**UP**" or "**DOWN"** keys on the right of the ceiling display.
3. Use "**UP**" or "**DOWN**" of the bottom display to change its value.

To exit: Press and release the **PRG** key or wait 30s without pressing any keys.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

12.2 How to enter the hidden menu Pr2

The hidden menu Includes all the parameters of the instrument.

1. Enter the first level menu Pr1.
2. Hold pressed the **PRG+ SET** keys for more than 7s, till the Pr2 label.
3. Release the keys, the first parameter and its value will be displayed.
4. Modify the parameter value according to the procedure described in previous paragraph.

To exit: Press and release the **PRG** key or wait 30s without pressing any keys.

NOTE: the set value is stored even when the procedure is exited by waiting the time-out to expire.

12.3 How to move a parameter from the hidden menu to the first level and viceversa.

Each parameter present in the HIDDEN MENU can be removed or put into "THE FIRST LEVEL" (Pr1l).

1. Enter the Pr2 menu.
2. Hold pressed the  key.
3. Push the **DOWN** key of **ceiling display**.

In HIDDEN MENU when a parameter is present in First Level the LED of the  key in on.

13. Parameters list

Hy1 Ceiling differential (-99 ÷ 99 °C) Intervention differential for the ceiling set point. Output is activated when the ceiling temperature is less than Set Point +Hy1.

LS1 Minimum set point limit for ceiling: (Down scale ÷ set1) Sets the minimum acceptable value for the set point of ceiling.

US1 Maximum set point limit for ceiling: (SET1÷ End scale) Set the maximum acceptable value for set point of ceiling.

Hy2 Bottom differential (-99 ÷ 99 °C) Intervention differential for the bottom set point. Output is activated when the bottom temperature is less than Set Point + Hy2.

LS2 Minimum set point limit for bottom: (Down scale ÷ set2) Sets the minimum acceptable value for the set point of bottom.

US2 Maximum set point limit for bottom: (SET2 ÷ End scale) Set the maximum acceptable value for set point of bottom.

PbC Type of probe: it allows to set the kind of probe used by the instrument: (**J**=TCJ, **c**=TCK; **P**=PT100)

oF1 Ceiling probe calibration (-99 ÷ 99 °C)

oF2 Bottom probe calibration (-99 ÷ 99 °C)

CF measurement unit (°C = Celsius / **°F** = Fahrenheit)

diS Default display (tP = temperature / **SEt** = Set Point) It established the displaying during the cooking: set points or temperatures.

ccY Steam injection setting (**Sin** = single injection, **riP** =repetitive injection) See par. 8.2 Steam injection,

AcY Steam injection activation (**MAn** = manual activation; **AUt** = automatic activation) See par. 8.2 Steam injection,

tcY Inhibition time between 2 following steam injections (0÷250s)) At the end of a injection cycle, start this timer. During this time all the steam injection requests are ignored.

tco Steam injection time (0 ÷ HSi seconds) it sets the duration of a steam injection cycle

HSi Maximum time for steam injection: (0÷60sec) it sets the maximum value for tco parameter (steam injection time). With HSi = 0 the steam is injected as long as the key is pressed.

tES Automatic activation of the steam extractor before the end of cooking (not for the XF331M) (0÷90min)

tFS Fan restarting delay after steam injection (only for XF332M) (0÷90min)

AC1 Ceiling temperature alarm configuration
rE = **related to Ceiling Set Point** High and Low temperature alarms are signalled when the temperature exceeds the following values: "SET+AU1" and "SET+AL1".

Ab = **absolute temperature**: High and low ceiling temperature alarms are established by the AL1 and AU1 parameters.

AL1 Low temperature alarm for the ceiling
AC1 = **rE**: 0 ÷ 120°C
AC1 = **Ab**: Down scale ÷ Au1
when this temperature is reached and after the **dA1** delay time, the LA alarm is enabled,.

AU1 High temperature alarm for the bottom:
AC1= rE: 0 ÷ 120°C
AC1= Ab: AL1 ÷ End Scale
when this temperature is reached and after the **dA1** delay time the HA alarm is enabled.

dA1 Temperature alarm delay for the ceiling temperature: (0÷120 min) time interval between the detection of a ceiling temperature alarm condition and the corresponding alarm signalling.

HA1 Differential for temperature alarm returns: (1÷15°C) differential for the re-entry of the alarm signalling.

AC2 Bottom temperature alarm configuration
rE = **related to bottom Set Point** High and Low temperature alarms are signalled when the temperature exceeds the following values: "SET+AU2" and "SET+AL2".
Ab = **absolute temperature**: High and low ceiling temperature alarms are established by the AL2 and AU2 parameters.

AL2 Low temperature alarm for the bottom
AC2 = **rE**: 0 ÷ 120°C
AC2 = **Ab**: Down scale ÷ Au2
when this temperature is reached and after the **dA2** delay time, the LA alarm is enabled,.

AU2 High temperature alarm for the bottom:
AC2 = rE: 0 ÷ 120°C
AC2 = Ab: AL2 ÷ End Scale
when this temperature is reached and after the **dA2** delay time the HA alarm is enabled.

dA2 Temperature alarm delay for the bottom temperature: (0÷120 min) time interval between the detection of a bottom temperature alarm condition and the corresponding alarm signalling.

HA2 Temperature alarm differential: (1÷15°C) differential for the re-entry of the alarm signalling.

tcE Energy Saving cycle time (1 ÷ 999 sec) it sets the Energy Saving cycle duration.

dcy Switching on percentage for the ceiling output during the Energy Saving cycle (0 ÷ 100 %)

i1P Digital input polarity to enabling steam injection (only for XF331M) (oP÷CL) **oP =** the steam injection is enabled if voltage is not present; **CL =** the steam injection is enabled if voltage is present;

Ptb Parameter table code: (read only) it shows the original code of the map.

rEL Release software: (read only) Software version of the microprocessor.

14. Use of the programming key "Hot Key"

The XF units can UPLOAD or DOWNLOAD the parameter list from its own E2 internal memory to the **"Hot Key"** and vice-versa.

14.1 DOWNLOAD (From the "Hot Key" to the instrument)

1. Turn OFF the instrument by means of the ON/OFF key, insert the **"Hot Key"** and then turn the instrument ON.
2. Automatically the parameter list of the **"Hot Key"** is downloaded into the controller memory, the "**doL**" message is blinking. After 10 seconds the instrument will restart working with the new parameters.

At the end of the data transfer phase the instrument displays the following messages:
"**End** " for right programming. The instrument starts regularly with the new programming.
"**Err**" for failed programming. In this case turn the unit off and then on if you want to restart the download again or remove the "**Hot key**" to abort the operation.

14.2 UPLOAD (From the instrument to the "Hot key")

1. When the unit is ON, insert the "**Hot key**"
2. Push the **UP** key of the Ceiling display; the **"uPL"** message appears.

At the end of the data transfer phase the instrument displays the following messages:
"**End** " for right programming.
"**Err**" for failed programming. In this case push "**UP**" key if you want to restart the programming again or remove the not programmed "**Hot key**".

15. Mounting & installation

The instruments are suitable only for internal use. They are panel mounted, hole dims 69x135 mm, and fixed with the supplied clips.
The ambient operating temperature range is between 0÷60°C.
Avoid locations subject to heavy vibration, corrosive gases or excessive dirt. The same applies to the probes. Ensure ventilation around the instrument.

16. Electrical connections

The instruments are provided with disconnectable screw terminal blocks to connect cables with a cross section up to 2,5 mm^2.

Before connecting cables make sure the power supply complies with the instrument's requirements. Separate the input connection cables from the power supply cables, from the outputs and the power connections. **Do not exceed the maximum current allowed on each relay**, in case of heavier loads use a suitable external relay.

17. Alarm signalling

Mess	Cause	Outputs
"EE"	Data or memory failure	
"PF"	Probe failure	The relative output is turned off
"HA"	Maximum temperature alarm	Outputs unchanged.
"LA"	Minimum temperature alarm	Outputs unchanged.
"rTC"	Real time clock	Outputs unchanged.

17.1 "EE" alarm

The Dixell instruments are provided with an internal check for the data integrity. Alarm "EE" flashes when a failure in the memory data occurs. In such cases the alarm output is enabled.

17.2 Temperature alarms (HA, LA)

The temperature alarm controls doesn't work during:
1. if the cooking time is not in progress.
2. if the instrument is in standby mode.

Every time the temperature exceeds the limits for the dA1 and dA2 time an alarm message is given.

Temperature alarms "**HA**" and "**LA**" automatically stop as soon as the temperature returns to normal values.

17.3 Probe failure alarms (PF)

Probe alarm "**PF**" starts some seconds after the fault in the related probe; it automatically stop some seconds after the probe restarts normal operation. Check connections before replacing the probe.

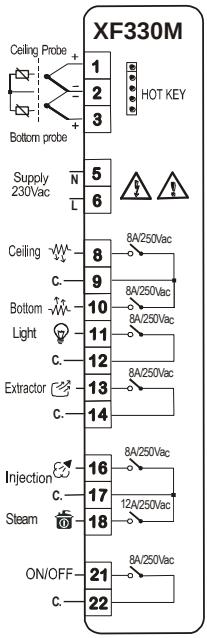
17.4 Real time clock alarm (rtc)

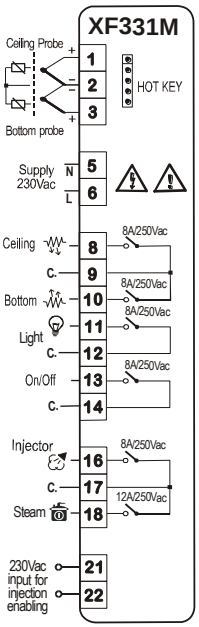
The **rtc** alarm is signalled when an error happened during the clock data reading phase. **Set the clock to reset it (see par 4.2)**

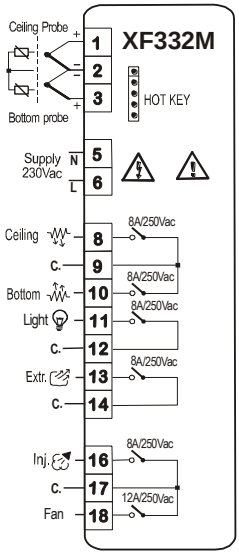
18. Technical features

Housing: plastic self extinguishing V0.
Case: 72x144 mm; depth 80mm.
Mounting: panel mounting 69x135 cut out
Frontal protection: IP54
Connections: Disconnectable screw terminal block ≤ 2,5 mm^2 heat-resistant wiring
Power supply: 230Vac or. 110Vac or 24Vac ± 10% 50/60Hz
Power absorption: 5VA max.
Display: 3 display 3 digits, red LED, 14,2 mm high.
Relay outputs: up to 7 (relay 8A 250Vac)
Digital input: only for XF331M: 1 line voltage
Inputs: 2 Pt100 or TC J or K selectable
Other output : alarm buzzer (optional)
Easy programming output for Hot Key
Data storing: on the non-volatile memory (EEPROM).
Kind of action: 1B.
Pollution grade: normal
Software class: A.
Operating temperature: 0÷60 °C.
Storage temperature: -30÷85 °C.
Relative humidity: 20÷85% (no condensing)
Measuring and regulation range:
Thermocouple J probe: 0÷600°C (32÷999°F)
Thermocouple k probe: 0÷900°C (32÷999°F)
Pt100 probe: -99÷600°C (-99÷999°F)
Resolution: 1 °C or 1 °F (selectable).
Accuracy (at ambient temp. 25°C): better than 1% F.S.
RTC back up battery: 48h

19. Wiring diagrams







20. Cooking programs, pre-set values

	Ceiling set	Bottom set	Time
Program 1	100	100	30 min
Program 2	100	100	30 min
Program 3	100	100	30 min
Program 4	100	100	30 min
Program 5	100	100	30 min
Program 6	100	100	30 min
Program 7	100	100	30 min
Program 8	100	100	30 min
Program 9	100	100	30 min

21. Parameters – Pre set Values

			XF330M		XF331M		XF332M	
	Description	Range	Val	Lev	Val	Lev	Val	Lev
Set1	Ceiling Set Point	LS1 ÷ US1	200	Pr1	200	Pr1	200	Pr1
Set2	Bottom Set Point	LS2 ÷ US2	200	Pr1	200	Pr1	200	Pr1
Hy1	Ceiling differential	-99 ÷ 99	-5	Pr1	-5	Pr1	-5	Pr1
LS1	Minimum set point limit for ceiling	Start Scale ÷ Set 1	0	Pr2	0	Pr2	0	Pr2
US1	Maximum set point limit for ceiling	Set 1 ÷ End Scale	600	Pr2	600	Pr2	600	Pr2
Hy2	Bottom differential	-99 ÷ 99	-5	Pr2	-5	Pr2	-5	Pr2
LS2	Minimum set point limit for bottom	Start Scale ÷ Set 2	0	Pr2	0	Pr2	0	Pr2
US2	Maximum set point limit for bottom	Set 2 ÷ End Scale	600	Pr2	600	Pr2	600	Pr2
Pbc	Type of probe	J=TCJ; c=TCK; P = PT100	J	Pr2	J	Pr2	J	Pr2
oF1	Ceiling probe calibration	-99 ÷ 99 °C	0	Pr1	0	Pr1	0	Pr1
oF2	Bottom probe calibration	-99 ÷ 99 °C	0	Pr1	0	Pr1	0	Pr1
CF	Measurement unit	°C = Celsius / °F = Fahrenheit	°C	Pr2	°C	Pr2	°C	Pr2
diS	Default display	tP = temp. / SEt = Set Point	tP	Pr2	tP	Pr2	tP	Pr2
ccY	Steam injection setting	Sin= single / riP = repetitive	Sin	Pr1	Sin	Pr1	Sin	Pr1
AcY	Steam injection activation	MAn=manual/AUt=autom.	MAn	Pr1	MAn	Pr1	MAn	Pr1
tcY	Inhibition time between 2 following steam injections	1 ÷ 250 sec	10	Pr1	10	Pr1	10	Pr1
Tco	Steam injection time	0 ÷ 60 min	3	Pr1	3	Pr1	3	Pr1
HSi	Maximum time for steam injection	0 ÷ 60 sec	10	Pr1	10	Pr1	10	Pr1
TES	Automatic activation of the steam extractor before the end of cooking	0 ÷ 99 min	0	Pr1	-	-	0	Pr1
tFS	Fan restarting delay after steam injection	0 ÷ 99 min	-	-	-	-	0	Pr1
Ac1	Ceiling temperature alarm configuration	Ab = absolute / rE = relative	Ab	Pr2	Ab	Pr2	Ab	Pr2
AL1	Low temperature alarm for the ceiling	0 ÷ 120 / Start Scale ÷ Au1	0	Pr2	0	Pr2	0	Pr2
Au1	High temperature alarm for the bottom	0 ÷ 120/AL1 ÷ End Scale	600	Pr2	600	Pr2	600	Pr2
DA1	Temperature alarm delay for the ceiling temperature	0 ÷ 120 min	0	Pr2	0	Pr2	0	Pr2
HA1	Differential for temperature alarm returns	1 ÷ 15	2	Pr2	2	Pr2	2	Pr2
Ac2	Bottom temperature alarm configuration	Ab = absolute / rE = relative	Ab	Pr2	Ab	Pr2	Ab	Pr2
AL2	Low temperature alarm for the bottom	0 ÷ 120 / Start Scale ÷ Au2	0	Pr2	0	Pr2	0	Pr2
Au2	High temperature alarm for the bottom	0 ÷ 120 / AL2÷End Scale	600	Pr2	600	Pr2	600	Pr2
DA2	Temperature alarm delay for the bottom temperature	0 ÷ 120 min	0	Pr2	0	Pr2	0	Pr2
HA2	Temperature alarm differential	1 ÷ 15 °C	2	Pr2	2	Pr2	2	Pr2
tcE	Energy Saving cycle time	1 ÷ 999 sec	120	Pr1	120	Pr1	120	Pr1
dcy	Switching on percentage for the ceiling output during the Energy Saving cycle	0 ÷ 100 %	50	Pr1	50	Pr1	50	Pr1
i1P	Digital input polarity to enabling steam injection	oP÷CL	-	-	OP	Pr2	-	-
Ptb	Parameter table code	-	-	Pr2	-	Pr2	-	Pr2
rEL	Software release	-	-	Pr2	-	Pr2	-	Pr2

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