

DIMENSIONAL DATA

OVERALL DIMENSIONS AND PANEL CUTOUT

The dimensions are expressed in millimetres and inches (fifth-scale drawing).

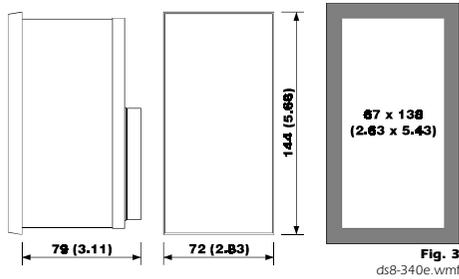


Fig. 3
ds8-340e.wmf

INSTALLATION

WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

Panel mounting, with the equipped screw brackets (fifth-scale drawing).

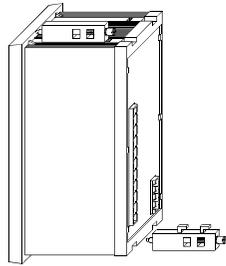


Fig. 4
ms8-356.wmf

ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE

Instance of typical application.

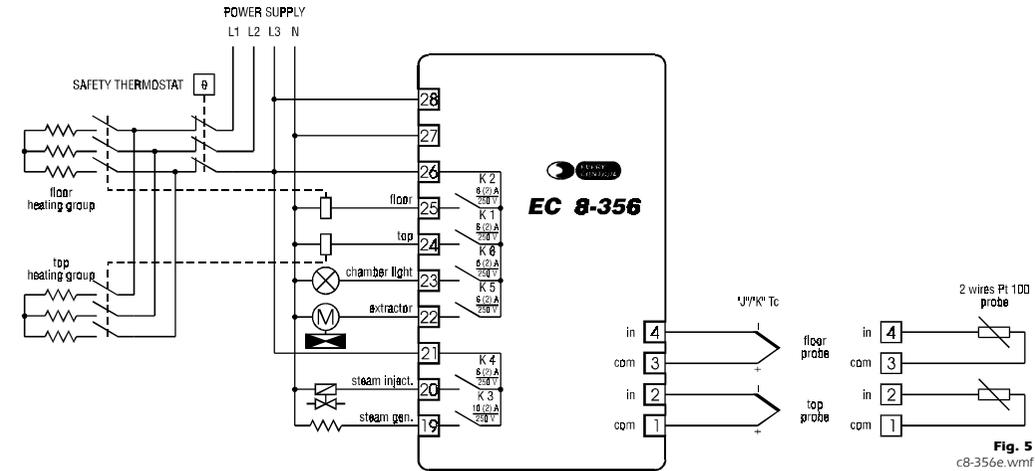


Fig. 5
c8-356e.wmf

BUILDER DATA

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EC 8-356

ON-OFF digital controller for electrical bread ovens with separated top and floor temperature regulation, programmable "cooking timer" and "delayed turning ON"

Operating instructions

Release 2/00 of July the twenty-first 2000

Code EC 8-356 DOC E002

File 8356e.p65

IMPORTANT:

The use of this new instrument is easy; but for safety reasons, it is important read these instructions carefully before the installation or before the use and follow all additional informations.

It is very important keep these instructions with the instrument for future consultations.



Fig. 1
fb-356.wmf

GENERAL INFORMATIONS

WHAT IS THE USE

EC 8-356 is an ON-OFF digital controller studied for electrical bread ovens management which basic characteristics are the separated top and floor temperature regulation, the programmable "cooking timer", "delayed turning ON" and the "ON STAND-BY" key; through the keys present on the instrument frontal panel it is possible to operate on other functions as the steam generator, steam injection (to pulse or to pulse/persistence, according with the modality pre-set in factory), extractor management, the chamber light control and on the "economy" function (it is studied to limit the peak value of the power consumption).

In factory the instrument gets pre-set to accept at the measure inputs "J"/"K" thermocouples or 2 wires Pt 100 probes.

EC 8-356 is available in the 72 x 144 mm (2.83 x 5.66 in.) case and it is studied for panel mounting with the equipped screw brackets.

GETTING STARTED

INSTALLATION

EC 8-356 was studied for panel mounting, panel cutout 67 x 138 mm (2.63 x 5.43 in.), with the equipped screw brackets (the overall dimensions and the panel cutout are related in Fig. 3, the fixing system suggested by the builder is related in Fig. 4).

ADDITIONAL INFORMATIONS

- the panel thickness must be included from 1 to 5 mm (0.04 to 0.19 in.)
- verify if the using conditions (ambient temperature, humidity, etc.) are within the limits indicated by the builder (see the chapter TECHNICAL DATA)
- install the instrument in a location with a suitable ventilation, to avoid the internal overheating of the instrument
- do not install the instrument near surfaces that can obstruct the air-grating (carpets, covers, etc.), heating sources (radiators, hot air ducts, etc.), locations subject to direct sunlight, rain, humidity, excessive dust, mechanical vibrations or bumps, devices with strong magnetos (microwave ovens, big speakers, etc.)
- according with the safety norms, the protection against possible contacts with electrical parts and parts protected with functional insulation only must be ensured through a correct installation procedure of the instrument; all parts that ensure the protection must be fixed so that they can not be removed if not with a tool.

ELECTRICAL CONNECTION

EC 8-356 is provided with two extractable screw terminal blocks for cables up to 2.5 mm² (0.38in.², for the connection to the power supply, measure inputs and outputs) located on the instrument back panel (the connections to derive are related in Fig. 5 and they are checkable on the polyester label stuck on the instrument case).

ADDITIONAL INFORMATIONS

- if the instrument is brought from a cold to a warm location, the humidity may condense inside the instrument; wait about an hour before supply the instrument
- verify if the operating power supply voltage, electrical frequency and power of the instrument correspond to the local power supply (see the chapter TECHNICAL DATA)
- do not supply more instruments with the same transformer
- if the instrument is installed on a vehicle, its power supply must be derived directly from the battery of the vehicle
- give the instrument a protection able to limit the current absorbed in case of failure
- the instrument remains connected to the local power supply as long as the terminals 27 and 28 are derived to the local power supply, even if the instrument is apparently turned off
- if the instrument is supplied from low voltage use low voltage loads
- give the probes a protection able to insulate them against possible contacts with metal parts or use insulated probes
- give the outputs a protection able to protect them against short circuit and overload
- do not try to repair the instrument; for the repairs apply to highly qualified staff

- if you have any questions or problems concerning the instrument please consult Every Control (see the chapter BUILDER DATA).

USE

PRELIMINARY INFORMATIONS

After derived the connections related in Fig. 5, the instrument reposes the last settings stored.

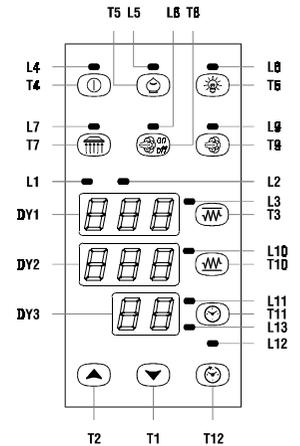


Fig. 2
iu8356.wmf

Keeping pushed for two seconds at least the key T4 the instrument turning ON (status ON) or turning OFF (status STAND-BY), except during the setting procedures; the LED L4 is associated to the instrument status, it is turned ON during the status STAND-BY and it is turned OFF during the status ON.

During the status STAND-BY the displays are turned OFF and all outputs are forced to the status OFF.

During the status ON, in the course of the normal functioning the display DY1 displays the temperature read by the top probe, the display DY2 displays the temperature read by the floor probe and the display DY3 displays the "cooking timer" function length; if an alarm should be active the display DY1 or DY2 displays the alarm code flashing and the buzzer utters an intermittent beep as long as the cause that has given it does not disappear (see the chapter SIGNALS AND ALARMS); pressure on the key T1 during an alarm permits to silence the buzzer.

EC 8-356 is provided with one top setpoint, with one floor setpoint and with some configuration parameters that get stored in a non volatile memory and that permit to set the instrument according with one's requirements (see the chapter CONFIGURABILITY).

The output K 1 is associated to the top and to the top setpoint, it remains activated continuously as long as the temperature read by the top probe reaches the top setpoint and when it falls below the top setpoint of the hysteresis value (differential) the output gets reactivated.

The output K 2 is associated to the floor and to the floor setpoint, it remains activated continuously as long as the temperature read by the floor probe reaches the floor setpoint and when it falls below the floor setpoint of the hysteresis value (differential) the output gets reactivated.

The output K 3 is associated to the steam generator: pushing and releasing the key T8 the output gets activated or deactivated, except during the setting procedures; the LED L8 is associated to the output status, it is turned ON when the output is activated and it is turned OFF when the output is deactivated.

The output K 4 is associated to the steam injection; if the conditions permit it (the output K 3

must be activated) keeping pushed the key **T9** the output remains activated continuously for the steam injection minimum length at least or till the steam injection control end, except during the setting procedures and except what established with the parameters of the family tb; the LED **L9** is associated to the output status, it is turned ON when the output is activated and it is turned OFF when the output is deactivated.

The output K 5 is associated to the extractor; pushing and releasing the key **T7** the output gets activated or deactivated, except during the setting procedures; the LED **L7** is associated to the output status, it is turned ON when the output is activated and it is turned OFF when the output is deactivated.

The output K 6 is associated to the chamber light; pushing and releasing the key **T6** the output gets activated or deactivated, except during the setting procedures; the LED **L6** is associated to the output status, it is turned ON when the output is activated and it is turned OFF when the output is deactivated.

COOKING TIMER

To modify the “cooking timer” function length value push and release the key **T11** during the status ON and push and release over and over the key **T1** or **T2** as long as the display **DY3** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification push and release the key **T11** (to the release of the key **T11** the instrument automatically turns out from the “cooking timer” function length setting procedure); for the four seconds following the first release of the key **T11** or following the release of the key **T1** or **T2** the display **DY3** displays the set value and the LED **L11** flashes to indicate that a “cooking timer” function length setting procedure is running (passed four seconds from the first release of the key **T11** or from the release of the key **T1** or **T2** without operated with the keys the instrument automatically turns out from the “cooking timer” function length setting procedure).

Pushing and releasing the key **T12** during the status ON the “cooking timer” function gets activated or deactivated.

During this function the display **DY3** displays the decrease of the “cooking timer” function length and the LED **L12** flashes to indicate that the count of the time is running.

Passed the “cooking timer” function length the cooking timer signal gets activated.

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the “cooking timer” function activation is refused*
- *the “cooking timer” function length value gets stored in a non volatile memory even if a lack of power supply happens*
- *if a lack of power supply happens during the count of the “cooking timer” function length, when the power supply recovers the count gets repropose from the beginning but the function gets not activated.*

DELAYED TURNING ON

To modify the “delayed turning ON” function length value push and release the key **T11** during the status STAND-BY (to the release of the key **T11** the display **DY3** displays the actual value) and push and release over and over the key **T1** or **T2** as long as the display **DY3** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification push and release the key **T11** (to the release of the key **T11** the instrument automatically turns out from the “delayed turning ON” function length setting procedure); for the four seconds following the first release of the key **T11** or following the release of the key **T1** or **T2** the display **DY3** displays the set value and the LED **L13** flashes to indicate that a “delayed turning ON” function length setting procedure is running (passed four seconds from the first release of the key **T11** or from the release of the key **T1** or **T2** without operated with the keys the instrument automatically turns out from the “delayed turning ON” function length setting procedure).

Keeping pushed for two seconds at least the key **T12** during the status STAND-BY the “delayed turning ON” function gets activated or deactivated.

During this function the display **DY3** displays the decrease of the “delayed turning ON” function length and the LED **L12** flashes to indicate that the count of the time is running.

Passed the “delayed turning ON” function length the instrument automatically turning ON.

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the “delayed turning ON” function activation is refused*
- *the “delayed turning ON” function length value gets stored in a non volatile memory even if a lack of power supply happens*
- *the course of the “delayed turning ON” function length gets recorded each 30 minutes and it is stored in a non volatile memory even if a lack of power supply happens; when the power supply recovers the count gets repropose with an error of ±15 minutes.*

ECONOMY

Pushing and releasing the key **T5** during the status ON the “economy” function gets activated or deactivated, except during the setting procedures; the LED **L5** is associated to the “economy” function, during the status ON it is turned ON when the function is running and it is turned OFF when the function is not running.

During this function, if the temperatures read by the top and floor probes are below the respective setpoint the outputs K 1 and K 2 remain activated continuously but alternatively for the 50 % of the cycle time for the outputs activation during the “economy” function.

The “economy” function permits to limit the peak value of the power consumption.

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the “economy” function activation is refused.*

TOP SETPOINT SETTING (TOP WORKING TEMPERATURE)

To modify the top setpoint value push and release the key **T3** during the status ON (to the release of the key **T3** the display **DY1** displays the actual value) and push and release over and over the key **T1** or **T2** as long as the display **DY1** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification push and release the key **T3** (to the release of the key **T3** the display **DY1** displays the temperature read by the top probe again); for the four seconds following the first release of the key **T3** or following the release of the key **T1** or **T2** the display **DY1** displays the set value and the LED **L3** flashes to indicate that a top setpoint setting procedure is running (passed four seconds from

the first release of the key **T3** or from the release of the key **T1** or **T2** without operated with the keys the instrument automatically turns out from the top setpoint setting procedure).

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the access to the top setpoint setting procedure is refused*
- *the top setpoint is programmable within the limits established with the parameters rA1 and rA2*
- *the top setpoint value gets stored in a non volatile memory even if a lack of power supply happens.*

FLOOR SETPOINT SETTING (FLOOR WORKING TEMPERATURE)

To modify the floor setpoint value push and release the key **T10** during the status ON (to the release of the key **T10** the display **DY2** displays the actual value) and push and release over and over the key **T1** or **T2** as long as the display **DY2** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification push and release the key **T10** (to the release of the key **T10** the display **DY2** displays the temperature read by the floor probe again); for the four seconds following the first release of the key **T10** or following the release of the key **T1** or **T2** the display **DY2** displays the set value and the LED **L10** flashes to indicate that a floor setpoint setting procedure is running (passed four seconds from the first release of the key **T10** or from the release of the key **T1** or **T2** without operated with the keys the instrument automatically turns out from the floor setpoint setting procedure).

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the access to the floor setpoint setting procedure is refused*
- *the floor setpoint is programmable within the limits established with the parameters rA1 and rA2*
- *the floor setpoint value gets stored in a non volatile memory even if a lack of power supply happens.*

CONFIGURATION PARAMETERS SETTING

Configuration parameters are arranged on two levels, to protect the most tricky settings against undesirable violations and they are arranged in families that can be recognized through the initial letter of the label.

To gain access to the first level keep pushed at the same time for four seconds at least the keys **T1** and **T2** during the status ON (passed four seconds the display **DY1** displays the label **PA**).

To select a parameter of the first level push and release over and over the key **T1** or **T2** as long as the display **DY1** displays the label of the desired parameter.

To modify the parameter value keep pushed the key **T3** (the display **DY1** displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the display **DY1** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the display **DY1** displays the label of the parameter again).

To gain access to the second level enter inside the first level and select the label **PA**.

Keep pushed the key **T3** (the display **DY1** displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the display **DY1** displays -19 (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the display **DY1** displays the label **PA** again); keep pushed at the same time for four seconds at least the keys **T1** and **T2** (passed four seconds the display **DY1** displays the first parameter of the second level).

To select a parameter of the second level push and release over and over the key **T1** or **T2** as long as the display **DY1** displays the label of the desired parameter.

To modify the parameter value keep pushed the key **T3** (the display **DY1** displays the actual value) and at the same time push and release over and over the key **T1** or **T2** as long as the display **DY1** displays the desired value (keeping pushed the key **T1** or **T2** the value gets decreased or increased more quickly); after the modification release the key **T3** last (to the release of the key **T3** the display **DY1** displays the label of the parameter again).

To turn out from the configuration parameters setting procedure keep pushed at the same time for four seconds at least the keys **T1** and **T2** or do not operate with the keys for fifty seconds at least (time-out exit).

ADDITIONAL INFORMATIONS

- *for the whole period of a corrupted memory data alarm the access to the configuration parameters setting procedure is refused*
- *the modification of a parameter value which unit of measure is the hour or the minute or the second has not immediate effect; to obtain this effect it must not be executed during the course of the value*
- *the configuration parameters values get stored in a non volatile memory even if a lack of power supply happens.*

CONFIGURABILITY

COOKING TIMER

LABEL MIN.	MAX.	U.M.	ST.	COOKING TIMER
1	99	min.	5	“cooking timer” function length

It establishes the “cooking timer” function length.

DELAYED TURNING ON

LABEL MIN.	MAX.	U.M.	ST.	DELAYED TURNING ON
1	99	hours	1	“delayed turning ON” function length

It establishes the “delayed turning ON” function length.

TOP SETPOINT

LABEL MIN.	MAX.	U.M.	ST.	TOP SETPOINT
rA1	rA2	(*)	0	top setpoint

It establishes the temperature associated to the output K 1.

FLOOR SETPOINT

LABEL MIN.	MAX.	U.M.	ST.	FLOOR SETPOINT
rA1	rA2	(*)	0	floor setpoint

It establishes the temperature associated to the output K 2.

CONFIGURATION PARAMETERS

LABEL	MIN.	MAX.	U.M.	ST.	PASSWORD
PA	-99	100	---	0	password (§)

It is the password that permits to gain access to the second level.

LABEL	MIN.	MAX.	U.M.	ST.	MEASURE INPUTS
/0	10	21	---	(**)	kind of probe

It establishes the kind of probe that the instrument must recognize to its measure inputs, as indicated:

10 = "J" thermocouple 11 = "K" thermocouple
21 = 2 wires Pt 100 probe.

/1	-10	+10	(*)	0	calibration (§)
----	-----	-----	-----	---	-----------------

It establishes a threshold to add algebraically to the signals coming from the measure inputs (for instance to correct the signals).

/2	0	6	---	3	digital filter
----	---	---	-----	---	----------------

It establishes a time constant to apply to the signals coming from the measure inputs, as indicated:

0 = 0 sec. 1 = 0.4 sec.
2 = 1.2 sec. 3 = 3.0 sec.
4 = 8.0 sec. 5 = 19.8 sec.
6 = 48.0 sec.

/4	0	1	---	0	leading zeroes displaying
----	---	---	-----	---	---------------------------

It establishes if to display the leading zeroes, as indicated:

0 = the leading zeroes get not displayed
1 = the leading zeroes get displayed.

/8	0	1	---	1	unit of measure
----	---	---	-----	---	-----------------

It establishes the unit of measure with which the temperature gets displayed, as indicated:

0 = the unit of measure is the Fahrenheit degree
1 = the unit of measure is the Celsius degree.

LABEL	MIN.	MAX.	U.M.	ST.	ON-OFF TEMPERATURE REGULATOR ASSOCIATED RESPECTIVELY TO THE TOP SETPOINT AND TO THE OUTPUT K 1 AND TO THE FLOOR SETPOINT AND TO THE OUTPUT K 2
rA0	-15	-1	(*)	-2	hysteresis (differential) (§)

It establishes the hysteresis (differential) relative to the top setpoint and to the floor setpoint.

rA1	0	+999	(*)	0	minimum top and floor setpoint programmable
-----	---	------	-----	---	---

It establishes the minimum top and floor setpoint programmable; the instrument automatically verifies if the value established with the parameter rA1 is below the maximum top and floor setpoint programmable established with the parameter rA2.

rA2	0	+999	(*)	(**)	maximum top and floor setpoint programmable
-----	---	------	-----	------	---

It establishes the maximum top and floor setpoint programmable; the instrument automatically verifies if the value established with the parameter rA2 is above the minimum top and floor setpoint programmable established with the parameter rA1.

LABEL	MIN.	MAX.	U.M.	ST.	STEAM INJECTION REGULATOR ASSOCIATED TO THE OUTPUT K 4
tB0	1	255	sec.	1	disabling time between one injection and the other one

It establishes the time that disables a steam injection control from the moment of the previous steam injection control.

tB1	1	255	sec/1010		steam injection minimum length
-----	---	-----	----------	--	--------------------------------

It establishes the steam injection minimum length.

In factory the instrument gets preset to accept steam injection controls to pulse (in this case the output remains activated continuously for the time established with the parameter tB1) or to pulse/persistence (in this case the output remains activated continuously for the time established with the parameter tB1 at least or till the steam injection control end).

LABEL	MIN.	MAX.	U.M.	ST.	TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE FIRST TEMPERATURE ALARM
AA0	+1	+99	(*)	+2	hysteresis (differential)

It establishes the hysteresis (differential) relative to the parameter AA1.

AA1	-99	+999	(*)	0	alarm setpoint
-----	-----	------	-----	---	----------------

It establishes the temperature to which the temperature alarm gets activated according with the modality established with the parameter AA4 and it is referred to the top probe.

AA3	0	999	min.	0	disabling time to the alarm activation from the instrument start
-----	---	-----	------	---	--

It establishes the time that disables the temperature alarm activation from the moment of the instrument start.

AA4	1	7	---	1	kind of alarm
-----	---	---	-----	---	---------------

It establishes the kind of temperature alarm that the instrument must manage, as indicated:

1 = the temperature alarm never gets activated
2 = absolute lower temperature alarm
3 = absolute upper temperature alarm
4 = lower temperature alarm relative to the top setpoint
5 = upper temperature alarm relative to the top setpoint
6 = lower temperature alarm relative to the top setpoint with automatic recomputation and reenable
7 = upper temperature alarm relative to the top setpoint with automatic recomputation and reenable.

LABEL	MIN.	MAX.	U.M.	ST.	TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM
AB0	+1	+99	(*)	+2	hysteresis (differential)

It has the same significance of the parameter AA0.

AB1	-99	+999	(*)	0	alarm setpoint
-----	-----	------	-----	---	----------------

It establishes the temperature to which the temperature alarm gets activated according with the modality established with the parameter AB4 and it is referred to the floor probe.

AB3	0	999	min.	0	disabling time to the alarm activation from the instru-
-----	---	-----	------	---	---

ment start

It has the same significance of the parameter AA3.

AB4	1	7	---	1	kind of alarm
-----	---	---	-----	---	---------------

It establishes the kind of temperature alarm that the instrument must manage, as indicated:

1 = the temperature alarm never gets activated
2 = absolute lower temperature alarm
3 = absolute upper temperature alarm
4 = lower temperature alarm relative to the floor setpoint
5 = upper temperature alarm relative to the floor setpoint
6 = lower temperature alarm relative to the floor setpoint with automatic recomputation and reenable
7 = upper temperature alarm relative to the floor setpoint with automatic recomputation and reenable.

LABEL	MIN.	MAX.	U.M.	ST.	POWER MANAGER ASSOCIATED TO THE OUTPUTS K 1 AND K 2
c1	1	999	sec.	80	cycle time for the outputs activation during the "economy" function

It establishes the cycle time for the outputs activation during an "economy" function; during this function, if the temperatures read by the top and floor probes are below the respective setpoint the outputs remain continuously activated but alternatively for the 50 % of the time established with the parameter c1.

The "economy" function permits to limit the peak value of the power consumption.

c4	-1	120	sec.	5	buzzer activation length at the "cooking timer" function end
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It establishes the buzzer activation length at the "cooking timer" function end.

If the parameter c4 has value -1 the activation persists as long as it gets not manually silenced.

LABEL	MIN.	MAX.	U.M.	ST.	CONNECTION IN A SERIAL NETWORK WITH EVCOBUS PROTOCOL COMMUNICATION
L1	1	15	---	1	instrument address

It establishes the address to which the instrument (slave) answers when it is connected to a serial network with EVCOBUS protocol communication managed from a master (for instance a Personal Computer).

L2	0	7	---	0	instrument group
----	---	---	-----	---	------------------

It establishes the group to which the instrument (slave) answers when it is connected to a serial network with EVCOBUS protocol communication managed from a master (for instance a Personal Computer).

L3	7	255	sec.	7	time-out link
----	---	-----	------	---	---------------

It establishes for which time interval the instrument must store a connection to a serial network with EVCOBUS protocol communication from the moment in which an interruption of the connection happens.

L4	0	3	---	1	baud rate
----	---	---	-----	---	-----------

It establishes the speed with which the data get transmitted in a serial network with EVCOBUS protocol communication, as indicated:

0 = 1,200 baud
1 = 2,400 baud
2 = 4,800 baud
3 = 9,600 baud.

ADDITIONAL INFORMATIONS

- the symbol (*) indicates that the unit of measure depends from the parameter /8
- the symbol (§) indicates that the parameter is of the first level
- the symbol (**) indicates that the value depends from the measure input presetting requested.

SIGNALS AND ALARMS

SIGNALS

If the LED L1 is turned ON it means that the unit of measure of the quantity displayed on the displays DY1 and DY2 is the Celsius degree.

If the LED L2 is turned ON it means that the unit of measure of the quantity displayed on the displays DY1 and DY2 is the Fahrenheit degree.

If the LED L3 is turned ON it means that the output K 1 is activated.

If the LED L4 is turned ON it means that the instrument is in the status STAND-BY.

If the LED L5 is turned ON it means that an "economy" function is running.

If the LED L6 is turned ON it means that the output K 6 is activated.

If the LED L7 is turned ON it means that the output K 5 is activated.

If the LED L8 is turned ON it means that the output K 3 is activated.

If the LED L9 is turned ON it means that the output K 4 is activated.

If the LED L10 is turned ON it means that the output K 2 is activated.

If the LED L11 is turned ON it means that the unit of measure of the quantity displayed on the display DY3 is the minute.

If the LED L13 is turned ON it means that the unit of measure of the quantity displayed on the display DY3 is the hour.

If during the status STAND-BY the LED L12 flashes it means that a "delayed turning ON" function is running.

If during the status ON the LED L12 flashes it means that a "cooking timer" function is running.

If the display DY3 displays the indication "0" flashing, the buzzer utters an intermittent beep for some seconds and the LED L12 flashes (cooking timer) it means that a "cooking timer" function ended.

ALARMS

If the display DY1 displays the indication "E2" flashing and the buzzer utters an intermittent beep (corrupted memory data alarm) it means that there is a corruption of the configuration data in the memory (turn OFF and turn ON again the instrument; if to the turning ON again the alarm does not disappear the instrument must be replaced); during this alarm a "cooking timer", "delayed turning ON" and "economy" function activation is refused, the access to the setting procedures is refused and all outputs get forced to the status OFF.

If the display **DY1** displays the indication “**E0**” flashing and the buzzer utters an intermittent beep (**top probe failure alarm**) it means that: the kind of connected top probe is not proper (see the parameter /0), the top probe is faulty (verify the top probe integrity), there is a mistake in the instrument-top probe connection (verify the instrument-top probe connection integrity), the temperature read by the top probe is outside the limits permitted by the top probe in use (verify that the temperature near the top probe be inside the limits permitted by the top probe); during this alarm the output K 1 gets forced to the status OFF.

If the display **DY2** displays the indication “**E1**” flashing and the buzzer utters an intermittent beep (**floor probe failure alarm**) it means that there is one of the faults saw in the previous case but referred to the floor probe; during this alarm the output K 2 gets forced to the status OFF.

If the display **DY1** displays the indication “**EDC**” flashing and the buzzer utters an intermittent beep (**cold junction failure alarm**) it means that there is a mistake in the cold junction adjustment circuit (the instrument must be replaced); during this alarm the outputs K 1 and K 2 get forced to the status OFF.

If the display **DY1** displays the indication “**AL1**” flashing alternated to the temperature read by the top probe and the buzzer utters an intermittent beep (**first temperature alarm**) it means that the temperature read by the top probe is outside the limit established with the parameter AA1 (see the parameters AA0, AA1 and AA4); inactive.

If the display **DY2** displays the indication “**AL2**” flashing alternated to the temperature read by the floor probe and the buzzer utters an intermittent beep (**second temperature alarm**) it means that the temperature read by the floor probe is outside the limit established with the parameter Ab1 (see the parameters Ab0, Ab1 and Ab4); inactive.

If the display **DY1** displays the indication “**999**” flashing (**end of scale display**) it means that the temperature read by the top probe is outside the working range permitted by the instrument (verify that the temperature near the top probe be inside the limits permitted by the instrument); inactive.

If the display **DY2** displays the indication “**999**” flashing (**end of scale display**) it means that the temperature read by the floor probe is outside the working range permitted by the instrument (verify that the temperature near the floor probe be inside the limits permitted by the instrument); inactive.

If the display **DY3** displays the decrease of the “delayed turning ON” function length flashing, the buzzer utters an intermittent beep and the LED **L12** flashes it means that the instrument is in the status STAND-BY and that there is one of the alarms saw in the previous cases.

ADDITIONAL INFORMATION

- *the alarm codes are related in order of precedence.*

TECHNICAL DATA

TECHNICAL DATA

Case:	plastic black (PPO), self-extinguishing.
Size:	72 x 144 x 79 mm (2.83 x 5.66 x 3.11 in.), with terminal blocks.
Installation:	panel mounting, panel cutout 67 x 138 mm (2.63 x 5.43 in.), with the equipped screw brackets.
Type of protection:	IP 54.
Connections:	extractable screw terminal blocks with pitch 7.5 mm (0.29 in., power supply and outputs) and with pitch 5 mm (0.19 in., measure inputs) for cables up to 2.5 mm ² (0.38 in. ²).
Ambient temperature:	from 0 to +60 °C (+32 to +140 °F, 10 ... 90 % of not condensing relative humidity).
Power supply:	230 Vac or 115 Vac or 24 Vac or 12-24 Vac/dc or 12 Vac/dc, 50/60 Hz, 4 VA.
Insulation class:	II.
Alarm buzzer:	incorporated.
Measure inputs:	2 (top and floor probe) configurable, hardware depending, for “J”/“K” thermocouples or 2 wires Pt 100 probes.
Working range:	from -99 to +700 °C (-99 to +999 °F) for “J” thermocouple, from -99 to +999 °C (-99 to +999 °F) for “K” thermocouple, from -99 to +600 °C (-99 to +999 °F) for 2 wires Pt 100 probes.
Setting range:	from 0 to +999 °C (0 to +999 °F).
Timer setting range:	from 1 to 99 min. for the “cooking timer”, from 1 to 99 hours for the “delayed turning ON”.
Resolution:	1 °F with unit of measure in Fahrenheit, 1 °C with unit of measure in Celsius.
Display:	two 3-digit display 12.5 mm (0.49 in.) high red LED display with automatic minus sign, one 2-digit display 12.5 mm (0.49 in.) high red LED display, output status indicators, programming status indicators, unit of measure of the displayed quantity indicators.
Outputs:	six NO contact relays of which five 6 (2) A @ 250 Vac relays for top and floor heating groups, steam injection, extractor management and for chamber light control and one 10 (2) A @ 250 Vac relay for steam generator management.

HOW TO ORDER

CODING SYSTEM

Instrument name:	EC 8-356.
Desired measure input:	J (for “J”/“K” thermocouples), C (for 2 wires Pt 100 probes).
Desired power supply:	220 (230 Vac), 110 (115 Vac), A24 (24 Vac), 024 (12-24 Vac/dc), 012 (12 Vac/dc).
Options:	custom configuration, SSR outputs, serial port.