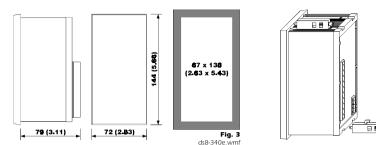
DIMENSIONAL DATA

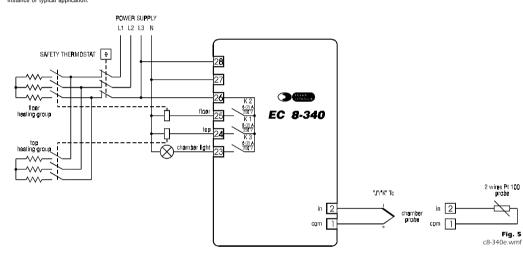
OVERALL DIMENSIONS AND PANEL CUTOUT

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



ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE Instance of typical application.



BUILDER DATA

EVERY CONTROL S.r.I.

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INSTALLATION

WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER Panel mounting, with the equipped screw brackets (fifth-scale drawing).

pped screw brackets (fifth-scale drawing).

Fig. 4

ms8-356 wmf

Operating instructions Release 1/00 of April the tenth 2000 Code EC 8-340 DOC E001 File 8340e.p65 IMPORTANT:

regulation

EC 8-340

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:

ON-OFF digital controller for electrical pizza ovens with separated top and floor power

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

GENERAL INFORMATIONS

WHAT IS THE USE

EC 8-340 is an ON-OFF digital controller studied for electrical pizza ovens management which basic characteristics are the separated top and floor power regulation 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 chamber light control and on the "guick heating" function (it is studied to reach the working setpoint in the shortest time excluding the power choking).

In factory the instrument gets preset to accept at the measure input "J"/"K" thermocouples or 2 wires Pt 100 probes.

EC 8-340 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 8-340 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
- Verify in the using conditions (almostin temperature, namidity, etc.) are writin the limits indicated by the builder (see the chapter TECHNICAL DATA)
 install the instrument in a location with a suitable vertilation, to avoid the inter-
- Instantine instantine in a rotation with a surface vehiclation, to avoid the instantine instantine in a rotation with a surface vehiclation, to avoid the instantine instantin instantine instantine instantin instantine
- do not instail the instrument near surfaces that can to 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 8-340 is provided with two extractable screw terminal blocks for cables up to 2.5 mm² (0.381n², for the connection to the power supply, measure input and outputs) located on the instrument back panel (the connections to derive are related in Fig. 5 and they are checkable on the polyster label stuck on the instrument case).

ADDITIONAL INFORMATIONS

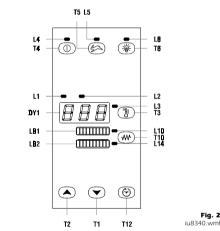
- if the instrument is brought from a cold to a warm location, the humidity may condense inside the instrument; wait about an hour before supply the instrument
- verify if the operating power supply voltage, electrical frequency and power of the instrument correspond to the local power supply (see the 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 termi-
- nals 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 probe a protection able to insulate it 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 reproposes the last settings stored.



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 and the LED bars 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 chamber probe, the LED bar L**B1** displays the percentage of power given to the output K1 and the LED bar L**B2** displays the percentage of power given to the output K 2: if an alarm should be active the display **DY1** 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 8-340 is provided with one working setpoint and with some configuration parameters that get stored in a non-valile 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 working setpoint, it gets activated with cyclical modality as long as the temperature read by the chamber probe reaches the working setpoint and when it falls below the working setpoint of the hysteresis value (differential) the output gets reactivated with cyclical modality.

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

During the cyclical modality, in the course of the cycle time for the outputs activation, the outputs K 1 and K 2 remain activated continuously but as much as possible alternatively for a time proportional to the percentage of power given to the outputs K 1 and K 2.

The output K 3 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

Keeping pushed for two seconds at least the key T5 during the status ON the "guick heating" function gets activated or deactivated, except during the setting procedures and except what established with the parameters of the family c: the LED L5 is associated to the "quick heating" 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 the outputs K 1 and K 2 remain activated continuously and the LED bars LB1 and LB2 flash alternatively

When the temperature read by the chamber probe rises above the value obtained adding algebraically the "quick heating" function stopping set to the working setpoint the function gets

stopped and the power choking gets reset. The "quick heating" function permits to reach the working setpoint in the shortest time exclud-

ing the nower choking ADDITIONAL INFORMATION

for the whole period of a corrupted memory data alarm the "quick heating" function activation is refused.

WORKING SETPOINT SETTING (WORKING TEMPERATURE)

To modify the working 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 chamber 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 working 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 working setpoint setting procedure).

ADDITIONAL INFORMATIONS

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

PERCENTAGE OF POWER GIVEN TO THE OUTPUTS K 1 AND K 2 SETTING

To modify the percentage of power given to the output K 1 value push and release the key T10 during the status ON and push and release over and over the key T1 or T2 as long as the LED bar LB1 displays the desired value; for the four seconds following the release of the key T10 or following the release of the key T1 or T2 the LED bar LB1 displays the set value flashing and the LED L10 flashes to indicate that a percentage of power given to the output K 1 setting procedure is running (passed four seconds from the 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 percentage of power given to the outputs K 1 and K 2 setting procedure

To modify the percentage of power given to the output K 2 value push and release the key T10 during the flashing of the LED L10 and push and release over and over the key T1 or T2 as long as the LED bar LB2 displays the desired value: for the four seconds following the release of the key T10 or following the release of the key T1 or T2 the LED bar LB2 displays the set value flashing and the LED L14 flashes to indicate that a percentage of power given to the output K 2 setting procedure is running (passed four seconds from the 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 percentage of power given to the outputs K 1 and K 2 setting procedure).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the access to the percentage of power given to the outputs K 1 and K 2 setting procedure is refused
- the percentage of power given to the outputs K1 and K2 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 $\frac{1}{4}$

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

WORK	ING SE	TPOIN	Т		
LABEL	MIN.	MAX.	U.M.	ST.	WORKING SETPOINT
	rA1	rA2	(*)	0	working setpoint
t esta	blishes	the ter	• •	ire asso	ciated to the outputs K 1 and K 2.
PERCE	NTAGE	OF PC	WER G	IVEN T	O THE OUTPUTS K 1 AND K 2
ABEL	MIN.	MAX.	U.M.	ST.	PERCENTAGE OF POWER GIVEN TO THE OUTPUTS K 1 AND K 2
	0	100	%	100	percentage of power given to the output K 1
t esta					wer given to the output K 1.
t acta	0 bliches	100 the ne	% rcentag	100 9. of po	percentage of power given to the output K 2 wer given to the output K 2.
			RAME		
	. MIN.	MAX.		ST.	PASSWORD
PA	-99	100		0	password (§)
t is th					gain access to the second level.
	MIN.	MAX.		ST.	MEASURE INPUT
0	10	21		(**)	kind of probe
t esta ndicat		the kir	nd of p	• •	at the instrument must recognize to its measure input, as
0 = 21 =		ermoco s Pt 10	uple O probe	11 = 3.	"K" thermocouple
1	-10	+10	(*)	0	calibration (§)
					ebraically to the signal coming from the measure input (for
			he sign		
2	0	6		3	digital filter
t esta ated:	blishes	a time	consta	nt to a	oply to the signal coming from the measure input, as indi-
ateu.) =	O sec.			1 =	0.4 sec.
=	1.2 se			3 =	3.0 sec.
=	8.0 se			5 =	19.8 sec.
) =	48.0 s	iec.			
4	0	1		0	leading zeroes displaying
t esta) =					ing zeroes, as indicated:
=			eroes g		lisplayed aved.
8	0	1		1	unit of measure
t esta	blishes	the un	it of me	easure	with which the temperature gets displayed, as indicated:
) =	the un	iit of m	easure	is the F	ahrenheit degree
=					Celsius degree.
ABEL	MIN.	WAX.	U.M.	ST.	ON-OFF TEMPERATURE REGULATOR ASSOCIATED TO THE WORKING SETPOINT AND TO THE OUTPUTS K 1 AND K 2
AO	-15	-1	(*)	-2	hysteresis (differential) (§)
t esta	blishes	the hy	steresis	s (differ	ential) relative to the working setpoint.
A1	0	+999	(*)	0	minimum working setpoint programmable
					setpoint programmable; the instrument automatically veri-
					he parameter rA1 is below the maximum working setpoint e parameter rA2.
A2	0	+999	(*)	(**)	maximum working setpoint programmable
t esta	blishes				ing setpoint programmable; the instrument automatically
/erifies	s if the	value e	stablish	ed with	the parameter rA2 is above the minimum working setpoint
					e parameter rA1.
ABEL	. MIN.	MAX.	U.M.	ST.	TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE FIRST TEMPERATURE ALARM
AAO	+1	+99	(*)	+2	hysteresis (differential)
t esta	blishes	the hy	steresis	s (differ	ential) relative to the parameter AA1.
AA1	-99	+999	(*)	0	alarm setpoint
					which the temperature alarm gets activated according with parameter AA4.
A3	0	999	min.	0	disabling time to the alarm activation from the instru-
			ne that	disable	ment start s the temperature alarm activation from the moment of the
	ment st			_	blad of sloves
AA4	1	7		1	kind of alarm

- 5 = upper temperature alarm relative to the working setpoint lower temperature alarm relative to the working setpoint with automatic recomputation 6 -
- and reenabling 7 = upper temperature alarm relative to the working setpoint with automatic recomputation and reenabling.

LABEL	. MIN.	MAX.	U.M.	ST.	TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE Second temperature Alarm
AbO	+1	+99	(*)	+2	hysteresis (differential)
It has	the sar	ne sign	ificance	of the	parameter AAO.
Ab1	-99	+999	(*)	0	alarm setpoint
It has	the sar	ne sign	ificance	of the	parameter AA1.

Ab3 0 999 min. 0 disabling time to the alarm activation from the instrument start

It has the same significance of the parameter AA3

Ah4 1 7 --- 1 kind of alarm

It has the same significance of the parameter AA4 LABEL MIN. MAX. U.M. ST. POWER MANAGER ASSOCIATED TO THE OUTPUTS K 1 AND K 2

c0 0 2 --- 0 kind of nower setting

- It establishes the kind of power setting that the instrument must manage, as indicated: 0 = inactive
- 1 = the power given to one output modification gives the automatic dispensing of the maximum nower to the other one and vice versa
- 2 = the power given to one output modification gives an automatic adjustment of the power given to the other one such as to guarantee that the addition of the power given even is equivalent to 50 % (if the heating groups are equivalent) of the total connected power.

c1 1 999 sec. 80 cycle time for the outputs activatio

It establishes the cycle time for the outputs activation due to the contribution of the percentage of power given to the outputs established with the suitable keys.

- r2 0 3 --- 1 modality that enables the "quick heating" function activation
- It establishes the modality that enables the "quick heating" function activation, as indicated: 0 = the "quick heating" function can not be activated
- 1 = the "quick heating" function can be activated and deactivated through pressure of the suitable key
- 2 = the instrument automatically activates a "quick heating" function at the moment of the instrument start and it can be deactivated through pressure of the suitable key
- the instrument automatically activates a "quick heating" function at the moment of the 3 = instrument start and it can be activated and deactivated through pressure of the suitable key

The "quick heating" function permits to reach the working setpoint in the shortest time excluding the power choking.

"quick heating" function stopping set relative to the workc3 -99 0 (*) -10 ina setpoin It establishes a threshold to add algebraically to the working setpoint; the value so obtained

establishes the temperature above which a "quick heating" function gets stopped when the power choking gets reset. 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.

baud rate

L4 0 3 ---1

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 display DY1 is the Celsius degree

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

If the LED L3 is turned ON it means that the temperature read by the chamber probe is below the working setpoint.

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 a "quick heating" function is running.

If the LED L6 is turned ON it means that the output K 3 is activated

If the LED L10 is turned ON it means that the output K 1 is activated.

If the LED L14 is turned ON it means that the output K 2 is activated.

If the LED bars LB1 and LB3 flash alternatively it means that a "quick heating" function is runnina.

If the display DY1 displays the indication "E2" flashing and the buzzer utters an intermittent been (corrunted memory data alarm) it means that there is a corruntion 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 "quick heating" 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 been (chamber probe failure alarm) it means that the kind of connected chamber probe is not proper (see the parameter /0) the chamber probe is faulty (verify the chamber probe integ rity) there is a mistake in the instrument-champer probe connection (verify the instrument chamber probe connection integrity) the temperature read by the chamber probe is outside the limits permitted by the chamber probe in use (verify that the temperature pear the chamber probe be inside the limits permitted by the chamber probe); during this alarm the outputs K 1 and K 2 get forced to the status OFF.

If the display DY1 displays the indication "EOC" 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 chamber probe and the buzzer utters an intermittent beep (first temperature alarm) it means that the temperature read by the chamber probe is outside the limit established with the parameter AA1 (see the parameters AA0, AA1 and AA4); inactive.

If the display DY1 displays the indication "AL2" flashing alternated to the temperature read by the chamber probe and the buzzer utters an intermittent beep (second temperature alarm) it means that the temperature read by the chamber 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 chamber probe is outside the working range permitted by the instrument (verify that the temperature near the chamber probe be inside the limits permitted by the instrument): inactive

ADDITIONAL INFORMATIONS

the alarm codes are related in order of precedence.

TECHNICAL DATA

TECHNICAL DATA

Case

Size:

Installation:

Connections:

Power supply:

Insulation class

Measure inputs

Working range:

Setting range:

Resolution

Display:

Outputs:

CODING SYSTE

Instrument nan

Desired measu

Desired power

Options:

3

Alarm huzzer:

Type of protection:

Ambient temperatur

	plastic black (PP0), self-extinguishing.
	72 x 144 x 79 mm (2.83 x 5.66 x 3.11 in.), with terminal blocks.
	panel mounting, panel cutout 67 x 138 mm (2.63 x 5.43 in.), with the equipped screw brackets. IP 54.
	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 input) for cables up to 2.5 mm² (0.38 in.²).
B:	from 0 to +60 °C (+32 to +140 °F, 10 \dots 90 % of not condensing relative humidity).
	230 Vac or 115 Vac or 24 Vac or 12-24 Vac/dc or 12 Vac/dc, 50/60 Hz, 4 VA.
	II.
	incorporated.
	1 configurable, hardware depending, for "J"/"K" thermo- couples or 2 wires Pt 100 probes.
	from -99 to +700 °C (-99 to +999 °F) for "J" thermocouple, from -99 to +999 °C (-99 to +999 °F) for "K" thermocou- ple, from -99 to +600 °C (-99 to +999 °F) for 2 wires Pt 100 probes.
	from 0 to +999 °C (0 to +999 °F).
	1 °F with unit of measure in Fahrenheit, 1 °C with unit of measure in Celsius.
	one 3-digit display 12.5 mm (0.49 in.) high red LED display with automatic minus sign, two 10 red LED diodes bars, output status indicators, programming status indicators, unit of measure of the displayed quantity indicators.
	three NO contact 6 (2) A @ 250 Vac relays for top and floor heating groups management and for chamber light con- trol.
ORDE	

нош то

M	
ne:	EC 8-340.
ire input:	J (for "J"/"K" thermocouples), C (for 2 wires Pt 100 probes).
supply:	220 (230 Vac) 115 (115 Vac) A24 (24 Vac) 024 (12-24 Vac/dc) 012 (12 Vac/dc). custom configuration, green LED display, SSR outputs, se- rial port.

- It establishes the kind of temperature alarm that the instrument must manage, as indicated: the temperature alarm never nets activated 2 = absolute lower temperature alarm absolute unner temperature alarm
- lower temperature alarm relative to the working setpoint

1 =