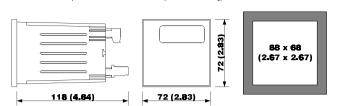
# **DIMENSIONAL DATA**

#### OVERALL DIMENSIONS AND PANEL CUTOUT

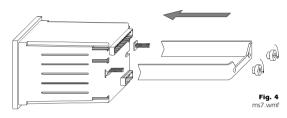
The dimensions are expressed in millimetres and inches (fourth-scale drawing)



# INSTALLATION

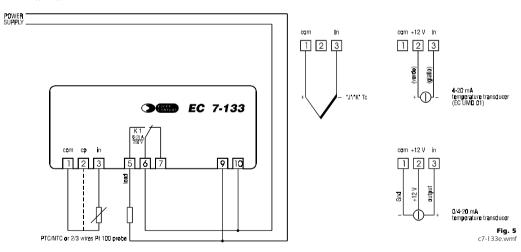
### WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

Panel mounting, with the equipped U-bracket (fourth-scale drawing).



# **ELECTRICAL CONNECTION**

CONNECTIONS TO DERIVE



# **BUILDER DATA**

EVERY CONTROL S.r.I.

Via Mezzaterra 6, 32036 Sedico Belluno ITALY Phone 0039/0437852468 (a.r.) Fax 0039/043783648 Internet addresses e-mail: every@worknet.it

#### http://www.everycontrol.it

# TO BE CAREFUL

This publication exclusively belongs to EVERY CONTROL and shall not be reproduced and distributed if not expressly authorized by the same EVERY CONTROL.

EVERY CONTROL does not assume any responsibility in order to the characteristics, to the technical data and to the possible mistakes related herein or deriving from the use of the same. EVERY CONTROL can not be considered responsible for damages caused from the inobservance of the additional informations.

EVERY CONTROL reserves the right to make any modification without prior notice and at any time without prejudice the basic functioning and safety characteristics.

ON-OFF single output digital thermoregulator

Fig. 3

ds7e wmf

Operating instructions Release 1/99 of March the eleventh 1999 Code EC 7-133 DOC E000 File 7133e n65

#### 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.

# **GENERAL INFORMATIONS**

# WHAT IS THE USE

EC 7-133 is an ON-OFF single output digital thermoregulator able to cover a temperature range from -99 to +999 °C (-99 to +999 °F).

In factory the instrument gets preset to accept at the measure input PTC/NTC probes or "J"/ "K" thermocouples or 2/3 wires Pt 100 probes or 2 and 3 wires 0/4-20 mA temperature transducers (in this last case it is possible to set the reading scale).

Some parameters permit to set the thermoregulator for "cooling" or "heating" functioning, to protect the connected load against overloads due to several starts repeated in a short time, to signal working conditions outside the safety limits.

EC 7-133 is available in the 72 x 72 mm (2.83 x 2.83 in.) case and it is studied for panel mounting with the equipped U-bracket.

# **GETTING STARTED**

#### INSTALLATION

EC 7-133 was studied for panel mounting, panel cutout 68 x 68 mm (2.67 x 2.67 in.), with the equipped U-bracket (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 overheading of the instrument
- do not install 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 7-133 is provided with one extractable screw terminal block for cables up to 2.5 mm<sup>2</sup> (0.38 in.<sup>2</sup>, for the connection to the power supply, measure input and output), 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 9 and 10 are derived to the local power supply, even if the instrument is apparently turned off
- give the probe a protection able to insulate it against possible contacts with metal parts or use insulated probes
- give the output a protection able to protect it 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).



Fig. 1 f7-133.wmf

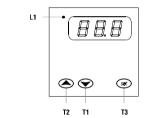
Fig. 2

iu7133 wm

# USE

#### PRELIMINARY INFORMATIONS

After derived the connections related in Fig. 5, during the normal functioning the instrument displays the temperature read by the probe.



If an alarm should be active the instrument displays the alarm code flashing and the buzzer uters 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 7-133 is provided with one working 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 CONFIGURABULITY).

The output K1 is associated to the working setpoint, it remains activated continuously as long as the temperature read by the probe reaches the working setpoint and when it rises above (if the output was set for "cooling" functioning) or it falls below (if the output was set for "heating" functioning) the working setpoint of the hysteresis value (differential) the output gets reactivated.

#### WORKING SETPOINT SETTING (WORKING TEMPERATURE)

To modify the working setpoint value keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument 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 the LED L1 flashes quickly to indicate that a working setpoint setting procedure is running (to the release of the key T3 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
- if the parameter rA5 has value 1 the working setpoint can not be modified as long as the parameter rA5 gets set to 0
- the working 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 nain access to the first level keen sushed at the same time for four seconds at least the keys.

T1 and T2 (passed four seconds the instrument displays the label PA).

- To select a parameter of the first level push and release over and over the key  ${\bf T1}$  or  ${\bf T2}$  as long as the instrument displays the label of the desired parameter.
- To modify the parameter value keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the



instrument 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 instrument 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 instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument 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 instrument 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 instrument 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 instrument displays the label of the desired parameter.

To modify the parameter value keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument 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 instrument 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 evenuted 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

# WORKING SETPOINT

LABEL MIN. MAX. U.M. ST. WORKING SETPOINT rA1 rA2 °C 0 working setpoint It establishes the temperature associated to the output K 1. CONFIGURATION PARAMETERS LABEL MIN. MAX. U.M. ST. PASSWORD PA -90 100 --- 0 password (§) It is the password that permits to gain access to the second level. LABEL MIN. MAX. U.M. ST. MEASURE INPUT /0 01 31 --- (\*) kind of probe It establishes the kind of probe that the instrument must recognize to its measure input, as indicated. 01 = PTC probe 03 = NTC probe 10 = "J" thermocouple 11 = "K" thermocouple 20 = 3 wires Pt 100 probe 21 = 2 wires Pt 100 probe 30 = 2 and 3 wires 4-20 mA temperature transducer 31 = 2 and 3 wires 0-20 mA temperature transducer. /1 -9 +10 °C 0 calibration (§) It establishes a threshold to add algebraically to the signal coming from the measure input (for instance to correct the signal). /2 0 6 --- 3 digital filter It establishes a time constant to apply to the signal coming from the measure input, 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. --- 0 leading zeroes displaying /4 0 1 It establishes if to display the leading zeroes, as indicated: 0 = the leading zeroes get not displayed 1 = the leading zeroes get displayed. /5 0 1 --- 1 decimal point It establishes the resolution with which the temperature gets displayed, as indicated: 0 = the temperature gets displayed with the resolution of the unit of measure 1 = the temperature gets displayed with the resolution of 1/10 of the unit of measure. /6 -99 +999 points -20 lower end of scale for 0/4-20 mA input (it coincides with the minimum calibration value of the transducer) It establishes the lower end of scale for 0/4-20 mA input and it must coincide with the minimum calibration value of the transducer. /7 -99 +999 points +80 upper end of scale for 0/4-20 mA input (it coincides with the maximum calibration value of the transducer) It establishes the upper end of scale for 0/4-20 mA input and it must coincide with the maximum calibration value of the transducer. LABEL MIN. MAX. U.M. ST. ON-OFF TEMPERATURE REGULATOR ASSOCIATED TO THE WORKING SETPOINT AND TO THE OUTPUT K 1 rA0 -99 +99 °C (\*) hysteresis (differential) (§) It establishes the hysteresis (differential) relative to the working setpoint. rA1 -99 +999 °C (\*) minimum working setpoint programmable It establishes the minimum working setpoint programmable; the instrument automatically verifies if the value established with the parameter rA1 is below the maximum working setpoint programmable established with the parameter rA2.

#### rA2 -99 +999 °C (\*) maximum working setpoint programmable

It establishes the maximum working setopint programmable: the instrument automatically verifies if the value established with the parameter rA2 is above the minimum working setpoint

progra rA3	0	1		1	"cooling" or "heating" functioning
	-	-			q, as indicated:
0 =					y, as indicated.
1 =	"heatir	ng" fur	ictioning ictioning	, j.	
rA4	0	1		0	kind of hysteresis (kind of differential)
				steresis	s (kind of differential), as indicated:
0 = 1 =	asymn symm				
rA5	0	1		0	locking of the working setpoint modification
		if to p	revent t	- he mod	lification of the working setpoint, as indicated:
= 0	the wo	orking	setpoint	can be	modified
1 =					t be modified as long as the parameter rA5 gets set to 0.
LABEL Cao	. IVIIN. 0	MAX. 999	U.M.	ST. O	OUTPUT K 1 PROTECTION disabling time to the output activation from the instru-
UNU	U	333	366.	U	ment start
lt esta	blishes	the tin	ne that	disables	s the output activation from the moment of the instrument
start.					
CA1	0	999	Sec.	0	disabling time to the output activation from the previous
It acts	hlichae	the ti	ma that	dicable	activation is the output activation from the moment of the previous
	activat		no mai	uisabio	s the output activation from the moment of the previous
CA2	0	999	sec.	0	disabling time to the output activation from the previous
					deactivation
	blishes deacti		me that	disable	is the output activation from the moment of the previous
CA3	0 O	vation.		0	output status during a probe failure alarm
		•			he output gets forced during a probe failure alarm, as indi-
cated:					
0 = 1 =					the output gets forced to the status OFF
I = CA4	auring N	a proi	be tailur	e alarm N	the output gets forced to the status ON. disabling time to the output activation and deactivation
	•	•	isahle th	•	ut activation and deactivation for a fixed time, as indicated:
0 =	inactiv			io outpi	
1 =					eactivation get disabled for 3 sec.
LABEL	. MIN.	MAX.	U.M.	ST.	TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE
	(*)	.00	**	(*)	FIRST TEMPERATURE ALARM
	(*)	+99	°C	(*)	hysteresis (differential)
lt esta	blishes	the hy	steresis	differ	hysteresis (differential) ential) relative to the parameter AA1.
lt esta AA1	blishes -99	the hy +999	°C	differ O	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint
AA1 It esta	blishes -99 blishes	the hy +999 the te	°C mperatu	differ 0 1re to w	hysteresis (differential) ential) relative to the parameter AA1.
It esta AA1 It esta the m	blishes -99 blishes	the hy +999 the te	°C mperatu	differ 0 1re to w	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru-
It esta AA1 It esta the mo AA3	-99 blishes odality 0	the hy +999 the te establis 999	°C mperatu shed wit min.	(differ 0 ure to w th the p 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start
It esta AA1 It esta the mo AA3 It esta	blishes -99 blishes odality 0 blishes	the hy +999 the te establis 999 the tin	°C mperatu shed wit min.	(differ 0 ure to w th the p 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru-
It esta AA1 It esta the mo AA3 It esta instrue	-99 blishes odality 0	the hy +999 the te establis 999 the tin	°C mperatu shed wit min.	(differ 0 ure to w th the p 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start
It esta AA1 It esta the mo AA3 It esta instrui AA4	blishes -99 blishes odality 0 blishes ment st 1	the hy +999 the te establis 999 the tin tart. 7	°C mperatu shed with min. ne that o	(differ 0 ure to w th the p 0 disables	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the
It esta AA1 It esta the mo AA3 It esta instrui AA4 It esta 1 =	blishes -99 blishes odality 0 blishes ment st 1 blishes the ter	the hy +999 the te establis 999 the tin tart. 7 the kin mperat	*steresis *C mperatu shed with min. ne that of  nd of ten ure alar	(differ 0 ure to w th the p 0 disables 1 mperatu m neve	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with parameter AA4. disabling time to the alarm activation from the instru- ment start the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated
It esta AA1 It esta the mo AA3 It esta instruct AA4 It esta 1 = 2 =	blishes -99 blishes odality 0 blishes ment st 1 blishes the ter absolu	the hy +999 the te establis 999 the tin tart. 7 the kin mperat the low	rsteresis °C mperatu shed with min. ne that of  nd of ten ure alar er temp	(differ 0 ure to w th the p 0 disables 1 mperatur m neve erature	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm ure alarm that the instrument must manage, as indicated: alarm
It esta AA1 It esta the mo AA3 It esta instrue AA4 It esta 1 = 2 = 3 =	blishes -99 blishes odality 0 blishes ment st 1 blishes the ter absolu absolu	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low the upp	rsteresis °C mperatu shed with min. ne that of  nd of ten ure alar er temp er temp	(differ 0 ure to with the p 0 disables 1 mperatum neve erature verature	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm ure alarm that the instrument must manage, as indicated: alarm
It esta AA1 It esta the mo AA3 It esta instrue AA4 It esta 1 = 2 = 3 = 4 = 5 = 100	-99 blishes odality 0 blishes ment st 1 blishes the ter absolu absolu lower upper	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low the upp temper	vsteresis °C mperatu shed with min. ne that o  nd of ten ure alar er temp er temp rature al rature a	(differ 0 ure to w th the p 0 disables 1 mperatum neve erature erature arm rel larm rel	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm ative to the working setpoint tative to the working setpoint
It esta AA1 It esta the mo AA3 It esta instrue AA4 It esta 1 = 2 = 3 = 4 = 5 = 100	-99 blishes odality 0 blishes ment st 1 blishes the ter absolu absolu lower upper lower	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low the upp temper temper temper	*steresis *C mperatu shed with min. ne that o  nd of teo ure alar er temp er temp er temp er temp ature al rature a	(differ 0 ure to w th the p 0 disables 1 mperatum neve erature erature arm rel larm rele alarm	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint alarm setpoint disabling time to the alarm activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm ative to the working setpoint ative to the working setpoint
It esta AA1 It esta the min AA3 It esta instruct AA4 It esta 1 = 2 = 3 = 4 = 5 = 6 =	-99 blishes odality 0 blishes ment st 1 blishes the ter absolu lower recom	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low te upp temper temper temper	"C mperatu shed with min. ne that o  nd of teu ure alar er temp ret remp rature al rature a rature a rature and rature a rature and rature and rature ra	(differ 0 ure to w th the p 0 disables 1 mperature erature erature erature atm rel atm rel alarm rel e alarn eenablin	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint alarm setpoint disabling time to the alarm activated according with arameter AA4. disabling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm ative to the working setpoint ative to the working setpoint
It esta AA1 It esta the min AA3 It esta instruct AA4 It esta 1 = 2 = 3 = 4 = 5 = 6 =	-99 blishes odality 0 blishes ment st 1 blishes the ter absolu lower upper lower recom upper	the hy +999 the te establis 999 the tim tart. 7 the kin mperat te low te upp temper temp putatio temp	"C mperatu shed with min. ne that o  nd of teu ure alar er temp ret remp rature al rature a rature a rature and rature a rature and rature and rature ra	(differ oure to w th the p oure to w th the p o disables disables 1 mperature arm rel larm rel arm rel	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint alarm setpoint disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm or relative to the working setpoint ative to the working setpoint with automatic ng.
It esta <b>AA1</b> It esta instrum <b>AA3</b> It esta instrum <b>AA4</b> It esta 1 = 2 = 3 = 4 = 5 = 6 = 7 =	blishes -99 blishes odality 0 blishes ment st 1 blishes the ter absolu lower upper lower recom	the hy +999 the te established 999 the time the tim the tim the kin mperat the low temper temper temper temper temp temp temp temp temp temp temp temp	steresis °C mperatu shed with min. ne that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that of one that	(differ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm ative to the working setpoint lative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE
It esta           AA1           It esta           It esta           instruit           AA3           It esta           It esta           It esta           It esta           It esta           It esta           S =           4 =           5 =           6 =           7 =           LABEL	-99 blishes odality o 0 blishes ment st 1 blishes ment st 1 blishes the ter absolu lower upper lower recom upper necom	the hy +999 the te establisi 999 the tim tart. 7 the kin mperat ter low te upp temper tempe putatic temp putatic MAX.	*steresis *C mperatu shed will min. ne that of  nd of tear rer temp reature al atarue a transformer ature al transformer n and r U.M.	(differ 0 ure to w th the p 0 disables 1 mperatum m neve ereature ereature arm rel a alarm eenablin st.	hysteresis (differential) ential; relative to the parameter AA1. alarm setpoint which the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm ative to the working setpoint ative to the working setpoint ative to the working setpoint ative to the working setpoint n relative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM
It estat           AA1           It estat           It estat           http://www.mailing.org/line           AA3           It estat           It estat           It estat           It estat           It estat           1 =           2 =           3 =           5 =           6 =           7 =           LABEL           Ab0	-99 blishes odality o 0 blishes ment st 1 blishes ment st 1 blishes the ter absolu lower recom upper lower recom upper recom .MIN. (*)	the hy +999 the te establisi 999 the tim tart. 7 the kin mperat tempe tempe tempe putatio temp putatio MAX. +99	steresis °C mperatushed win min. me that of min. me that of me that of	(differ 0 ure to w th the p 0 disables 1 mperatum m neve ereature ereature ereature arm rele a alarm eenablin ST. (*)	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm ative to the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng r relative to the working setpoint with automatic rg. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM
$\begin{array}{c} \text{It esta} \\ \hline \textbf{AA1} \\ \text{It esta} \\ \text{the min} \\ \hline \textbf{AA3} \\ \text{It esta} \\ \hline \textbf{aA3} \\ \text{It esta} \\ \text{instrum} \\ \hline \textbf{AA4} \\ \text{It esta} \\ 1 = 2 = 3 = 2 \\ 2 = 3 = 2 \\ 3 = 5 = 6 = 2 \\ 5 = 6 = 2 \\ \hline \textbf{A4} = 5 = 2 \\ 5 = 6 = 2 \\ \hline \textbf{A4} = 2 \\ \hline \textbf{A5} = 2 $	blishes -99 blishes odality o blishes ment st 1 blishes the ter absolu lower ' upper lower recom MIN. (*) the sam	the hy +999 the te establishing 999 the time tart. 7 the kin mperat the low the upp temper te	steresis °C mperatu shed wil min. ne that of min. ne that of  nd of tet ure alar re remp re remp rature al aterature a aterature a n and r Output verature al re remp re temp tarture al re remp re temp tarture al re remp re temp tarture al re retature a n and r U.M. °C	(differ 0 are to w th the p 0 disables 1 mperatum merature erature erature erature erature erature starm rel arm r	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint alarm setpoint disabiling time to the alarm activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm alarm alare to the working setpoint tative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM Pysteresis (differential) parameter AA0.
It esta AA1 It esta the m AA3 It esta instruu AA4 It esta 1 = 2 = 3 = 4 = 5 = 6 = 7 = LABEL Ab0 It has Ab1	blishes -99 blishes ddality v 0 blishes ment st 1 blishes the ter absolu lower v upper recom upper recom 	the hy +999 the te establish 999 the tim tart. 7 the kin mperat te low temper t	*steresis *C mperatu shed wif min. ne that of  nd of teure alar  nd of teure alar  nd of teure alar                	(differ 0 ure to w th the p 0 disables 1 mperatum m neve erature erature erature e alarm rele a alarr eenablin ST. (*) e of the 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm ative to the working setpoint tative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint
It esta AA1 It esta the m AA3 It esta instruu AA4 It esta 1 = 2 = 3 = 4 = 5 = 6 = 7 = LABEL Ab0 It has Ab1 Ab1 Ab1 Ab1 Ab2 Ab1 Ab2 Ab1 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2	blishes -99 blishes ddality v 0 blishes ment st 1 blishes the ter absolu lower v upper recom upper recom 	the hy +999 the te establish 999 the tim tart. 7 the kin mperat te low temper t	rsteresis °C mperatu shed will min. ne that u  nd of teu ure alar er temp er temp er temp er temp er tature al arture al rature al arture al artu	(differ 0 ure to w th the p 0 disables 1 mperatum m neve erature erature erature e alarm rele a alarr eenablin ST. (*) e of the 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint parameter AA4. disabling time to the alarm activation from the instru- ment start sthe temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm ative to the working setpoint ative to the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1.
It esta AA1 It esta the m AA3 It esta instruu AA4 It esta 1 = 2 = 3 = 4 = 5 = 6 = 7 = LABEL Ab0 It has Ab1 Ab1 Ab1 Ab1 Ab2 Ab1 Ab2 Ab1 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2 Ab2	blishes -99 blishes ddality 0 blishes ment st 1 blishes ment st 1 blishes the ter absolu lower upper recom upper recom 	the hy +999 the te establish 999 the tim the tim the tim the kin merat tenped temped t	*steresis *C mperatu shed wif min. ne that of  nd of teure alar  nd of teure alar  nd of teure alar                	(differ 0 ure to w th the p 0 disables 1 mperatu m neve erature erature erature e alarn st. (*) e of the 0 o o o o o o o o o o o o o	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm ire alarm that the instrument must manage, as indicated: afarm alarm alarm alarm ative to the working setpoint tative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint
It esta AA1 It esta the minimum AA3 It esta It esta It esta 2 = 3 4 = 2 5 = 6 6 = 7 LABEL It has Ab1 It has Ab3	blishes -99 blishes odality 0 blishes ment st 1 blishes the tent absolu upper lower recom MIN. (*) the san 0 0 0 0 0 0 0 0 0 0 0 0 0	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low temper temper temper temper temp putatio MAX. +99 me sign 999	rsteresis °C mperatument min. me that of me that of me that of the ure alar er temp rature al areture al	(differ 0 ure to w th the p 0 disables 1 mperature disables 1 mmerature erature erature erature erature e alarm st. (*) 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm alarm alarm alarm the the working setpoint tative to the working setpoint with automatic ng m relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru-
It esta AA1 It esta the minimum AA3 It esta It esta It esta 2 = 3 4 = 2 5 = 6 6 = 7 LABEL It has Ab1 It has Ab3	blishes -99 blishes odality 0 blishes ment st 1 blishes the tent absolu upper lower recom MIN. (*) the san 0 0 0 0 0 0 0 0 0 0 0 0 0	the hy +999 the te establis 999 the tim tart. 7 the kin mperat the low temper temper temper temper temp putatio MAX. +99 me sign 999	rsteresis °C mperatument min. me that of me that of me that of the ure alar er temp rature al areture al	(differ 0 ure to w th the p 0 disables 1 mperature disables 1 mmerature erature erature erature erature e alarm st. (*) 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint inch the temperature alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm ative to the working setpoint lative to the working setpoint with automatic ng m relative to the working setpoint parameter A1.
It esta AA1 It esta the m AA3 It esta instruct AA4 It esta instruct AA4 It esta It esta It esta It esta It esta It esta It esta It esta It esta It esta AA4 It esta It esta AA4 It esta It has Ab1 It has Ab4 It has Ab4 It has It	blishes -99 blishes ment st blishes ment st blishes ment st blishes the ter absolu lower upper recom MIN. (*) the sam 0 the sam 1 the sam	the hy +999 the te establision 999 the tim tart. 7 the kin mperative tempe tempe putation MAX. +99 ne sign 999 ne sign 999 ne sign 7 ne sign 7	rsteresis °C mperatu shed with min. ne that u  d of tet ure alar er temp ter temp trature al rature al r	(differ 0 0 0 0 0 0 0 0 0 1 mperatu m neve erature erature erature e alarn rele a dof the 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm ative to the working setpoint tative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4.
It esta AA1 It esta the m AA3 It esta instruct AA4 It esta instruct AA4 It esta It esta It esta It esta It esta It esta It esta It esta It esta It esta AA4 It esta It esta AA4 It esta It has Ab1 It has Ab4 It has Ab4 It has It	blishes -99 blishes ment st blishes ment st blishes ment st blishes the ter absolu lower upper recom MIN. (*) the sam 0 the sam 1 the sam	the hy +999 the te establision 999 the tim tart. 7 the kin mperative tempe tempe putation MAX. +99 ne sign 999 ne sign 999 ne sign 7 ne sign 7	rsteresis °C mperaturs min. ne that of min. ne that of ret remp ret ret remp ret ret remp ret ret remp ret ret ret ret ret ret ret ret ret ret	(differ 0 0 0 0 0 0 0 0 0 1 mperatu m neve erature erature erature e alarn rele a dof the 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabling time to the alarm gets activated according with arameter AA4. disabling time to the alarm activation from the instru- ment stat the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alare to the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabling time to the alarm activation from the instru- ment start kind of alarm parameter AA3. kind of alarm parameter AA4.
It esta AA1 It esta the m AA3 It esta instrum AA4 It esta instrum AA4 It esta 2 = 3 2 = 3 4 = 5 5 = 6 7 = 1 LABEL It has Ab1 It has Ab3 It has LABEL	blishes -99 blishes ment st blishes ment st blishes the ter absolu absolu absolu absolu upper lower recom MIN. (*) the san 0 the san 1 the san 0 the san 1 the san 0 the san 1 the san 0 the san 1 the san 0 the san 1 the san 1 the san 0 the san 1 the san 0 the san 1 the san 0 the san 1 the san 1 the san 1 the san 1 the san 1 the san 1 the san 0 the san 1 the san the s	the hy +999 the te establis 999 the tim fract. 7 the kin mperat the low temper	rsteresis °C mperatu shed with min. ne that u  d of tet ure alar er temp ter temp trature al rature al r	(differ 0 0 0 0 0 0 0 0 0 0 0 0 0	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start sthe temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm alarm the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4. CONNECTION IN A SERIAL NETWORK WITH EVCOBUS PROTOCOL COMMUNICATION
It esta AA1 It estauthe mm AA3 It estau It estau It estau 1 = 2 = 3 = 4 = 5 = 6 = CABEL It has Ab1 It has Ab3 It has Ab4 It has It	blishes -99 blishes dotality v 0 blishes ment st 1 blishes 1 blishes 1 blishes 1 blishes 1 blishes solu absolu absolu lower recom recom WIN. (*) the san 1 the san 1 1 the san 1 the san 1 t	the hy +999 the te establish 999 the tin mart. 7 the kin mperature tempe temper	rsteresis °C mperatu min. ne that of  d of tet ure alar er temp er temp er temp rature al rature al rature al rature al rature al of tet ificance  ificance    	(differ 0 ure to w th the p 0 disables 1 mperatu merature erature erature eenablin ST. (*) 0 of the 0 cof the 1 0 cof the 1 1 1 1 1 1 1 1 1 1 1 1 1	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm alarm alarm ative to the working setpoint tative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM Mysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4. CONNECTION IN A SERIAL NETWORK WITH EVCOBUS PROTOCLO COMMUNICATION
It esta AA1 It esta the m AA3 It esta instruu AA4 It esta It has It has	blishes -99 blishes dodality i 0 blishes ment st 1 blishes ment st 1 blishes the ter absolu lower upper recom MIN. (*) the san 1 the san 1 blishes ment st 1 blishes the ter the ter absolu lower upper recom 1 the san 1 blishes ment st 1 blishes the ter absolu lower upper recom MIN. 1 blishes the san 1 blishes the san the	the hy +999 the te establish 999 the tim mperature tempe tempeutation temp tempeutation temp temper tempe temper t	rsteresis *C mperatu shed wii min. ne that of receive and of teu ure alar ture	(differ 0 ure to w 1 mperatum mperatum mperatum mererature arm rel arm rel e alarn st. (*) e of the 0 e of the st. 1 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm ative to the working setpoint ative to the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4. CONNECTION IM A SERIAL NETWORK WITH EVCOBUS PROTOCOL COMMUNICATION instrument (slave) answers when it is connected to a
It esta AA1 It esta It esta It esta It esta It esta AA4 It esta AA4 It esta S = 4 = 5 = 6 = 7 = LABEL It has Ab1 It has Ab4 It has Ab4 It has Ab4 It has S = Ab4 It has Ab4 It has Ab4 Ab4 It has Ab4 Ab4 It has Ab4 Ab4 Ab4 It has Ab4 Ab4 Ab4 Ab4 Ab4 Ab4 Ab4 Ab4	blishes -99 blishes dodality i 0 blishes ment st 1 blishes ment st 1 blishes the ter absolu lower upper recom MIN. (*) the san 1 the san 1 blishes ment st 1 blishes the ter the ter absolu lower upper recom 1 the san 1 blishes ment st 1 blishes the ter absolu lower upper recom MIN. 1 blishes the san 1 blishes the san the	the hy +999 the te esstabilis 999 the tim art. 7 the kin mperat ten pp temper temp putation temp putation temp putation <b>MAX.</b> 7 <b>me sign</b> <b>7</b> <b>me sign</b> <b>7</b> <b>me sign</b> <b>7</b> <b>15</b> the add (with fill) <b>15</b>	rsteresis *C mperatu shed will min. the that if the	(differ 0 ure to w 1 mperatum mperatum mperatum mererature arm rel arm rel e alarn st. (*) e of the 0 e of the st. 1 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start s the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm alarm alarm alarm alarm alarm ative to the working setpoint tative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM Mysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4. CONNECTION IN A SERIAL NETWORK WITH EVCOBUS PROTOCLO COMMUNICATION
It esta AA1 It esta AA3 It esta instrum AA4 It esta 1 = 2 2 = 3 = 4 = 5 = 6 = 7 = LABEL Ab0 It has Ab1 It has Ab1 It has Ab1 It esta Serial It has Ab2 It has Ab4 It esta Ab5 It has Ab4 It has Ab4 It esta Ab5 It has Ab4 It has Ab4 I	blishes -99 blishes dolity ( 0 blishes 1 1 blishes absolution absolution upper recom upper recom upper recom upper recom upper the san 1 the san 1 blishes mint st Absolution (*) the san 1 blishes absolution (*) the san 1 blishes (*) blishes (*) blishes (*) blishes (*) (*) blishes (*) blishes (*) (*) blishes (*) (*) (*) (*) (*) (*) (*) (*)	the hy +999 the te esstablis 999 999 the the tim tart. 7 the kin mperatite temperter temp putatic temp putatic temp putatic temp essign 999 999 me sign 7 me sign 7 max. 15 the ac kin the ac kin the ac kin the ac temp 999 7 7	rsteresis °C mperatu shed wild min. ne that u 	(differ 0 urre to w th the p 0 disables 1 mperatum neve erature erature erature erature erature eraturs s alarm rel alarm rel alarm rel alarm frel alarm fr	hysteresis (differential) ential) relative to the parameter AA1. alarm setpoint disabiling time to the alarm gets activated according with arameter AA4. disabiling time to the alarm activation from the instru- ment start is the temperature alarm activation from the moment of the kind of alarm are alarm that the instrument must manage, as indicated: r gets activated alarm ative to the working setpoint ative to the working setpoint ative to the working setpoint ative to the working setpoint with automatic ng n relative to the working setpoint with automatic ng. TEMPERATURE ALARM REGULATOR ASSOCIATED TO THE SECOND TEMPERATURE ALARM hysteresis (differential) parameter AA0. alarm setpoint parameter AA1. disabiling time to the alarm activation from the instru- ment start parameter AA3. kind of alarm parameter AA4. CONNECTION IM A SERIAL NETWORK WITH EVCOBUS PROTOCOL COMMUNICATION instrument (slave) answers when it is connected to a

Personal Computer).

### ADDITIONAL INFORMATIONS

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

if the instrument is preset to accept at the measure input "J"/"K" thermocouples the parameter /5 does not exist

if the instrument is not preset to accept at the measure input 2 and 3 wires 0/4-20 mA temperature transducers the parameters /6 and /7 do not exist.

# SIGNALS AND ALARMS

#### SIGNALS

If the LED L1 is turned ON it means that the output K 1 is activated. If the LED L1 flashes it means that a count of a disabling time to the output K1 activation is running (see the parameters CAO, CA1, CA2 and CA4).

If the instrument displays the indication "="" it means that the working setpoint can not be modified (see the parameters rA5)

#### 

If the instrument 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 the access to the working setpoint setting and the configuration parameters setting procedures is refused and the output K 1 gets forced to the status OFF.

If the instrument displays the indication "EO" flashing and the buzzer utters an intermittent beep (probe failure alarm) it means that: the kind of connected probe is not proper (see the parameter /0), the probe is faulty (verify the probe integrity), there is a mistake in the instrument-probe connection (verify the instrument-probe connection integrity), the temperature read by the probe is outside the limits permitted by the probe in use (verify that the temperature near the probe be inside the limits permitted by the probe); during this alarm the output K 1 gets forced to the status established with the parameter CA3.

If the instrument displays the indication "EOC" flashing and the buzzer utters an intermittent beep (cold junction/third wire failure alarm) it means that, if the instrument is preset to accept at the measure input ".I"/"K" thermocouples there is a mistake in the cold junction adjustment circuit (the instrument must be replaced), if the instrument is preset to accept at the measure input 2/3 wires Pt 100 probes and it is set to recognize to its measure input 3 wires Pt 100 probes the third wire of the probe is not connected (verify the instrument-probe connection integrity); during this alarm the output K 1 gets forced to the status established with the parameter CA3.

If the instrument displays the indication "AL1" flashing alternated to the temperature read by the probe and the buzzer utters an intermittent been (first temperature alarm) it means that the temperature read by the probe is outside the limit established with the parameter AA1 (see the narameters AA0 AA1 and AA4) inactive

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

If the instrument displays the indication "999" flashing (end of scale display) it means that the temperature read by the probe is outside the working range permitted by the instrument (verify that the temperature near the 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:	plastic black (PPO), self-extinguishing.
Size:	72 x 72 x 110 mm (2.83 x 2.83 x 4.33 in.), with terminal block.
Installation:	panel mounting, panel cutout 68 x 68 mm (2.67 x 2.67 in.) with the equipped U-bracket.
Type of protection:	IP 54.
Connections:	extractable screw terminal block with pitch 5.08 mm (0.2 in., power supply, measure input and output) for ca bles up to 2.5 mm <sup>2</sup> (0.38 in. <sup>2</sup> ).
Ambient temperature:	from 0 to +60 °C (+32 to +140 °F, 10 90 % of not con- densing relative humidity).
Power supply:	230 Vac or 115 Vac or 24 Vac or 12-24 Vac/dc or 12 Vac/dc, 50/60 Hz, 2 VA.
Insulation class:	II.
Alarm buzzer:	incorporated.
Measure inputs:	1 configurable, hardware depending, for PTC/NTC probes or "J"/"K" thermocouples or 2/3 wires Pt 100 probes or 2 and 3 wires 0/4-20 mA temperature transducers (Ri 56 0hm); at terminal 2 +12 V (+30 %, -20 %) are available to supply the transducer.
Working range:	from -50 to +150 °C (-58 to +302 °F) for PTC probe, from -40 to +110 °C (-40 to +230 °F) for NTC probe, from -99 to +700 °C (-99 to +999 °F) for "N" thermocouple, from -99 to +999 °C (-99 to +999 °F) for "X" thermocouple, from -99 to +600 °C (-99 to +999 °F) for 2/3 wires Pt 100 probes configurable for 2 and 3 wires 0/4-20 mA temperature trans ducers.
Setting range:	from -99 to +999 °C (-99 to +999 °F).
Resolution:	configurable for 0.1 (except the instruments preset to ac cept at the measure input "J"/"K" thermocouples) or 1 °C (1 °F).
Display:	3-digit display 12.5 mm (0.49 in.) high red LED display with automatic decimal point and minus sign, output sta- tus indicator.
Outputs:	one change-over contact 8 (3) A @ 250 Vac relay for regu- lation load management.

# **HOW TO ORDER**

CODING SYS

Instrument

**Desired** me

Desired nov

Ontions:

STEM	
name:	EC 7-133.
asure input:	P (for PTC/NTC probes), J (for "J"/"K" thermocouples), C (for 2/3 wires Pt 100 probes), I (for 2 and 3 wires 0/4-20 mA temperature transducers).
ver supply:	220 (230 Vac) 115 (115 Vac) A24 (24 Vac) 024 (12-24 Vac/dc) 012 (12 Vac/dc).
	custom configuration, temperature display in °F, green LED display, SSR output, serial port.