Revision Date	Description
12/06/2018	• First release

Summary

NG01 is a control system for pellet stoves available in the versions Air and Hydro. It is characterised for:

- installing and use simplicity
- simple and direct user's functions
- reliable and flexible functioning software with well-established TiEmme elettronica technology
- advanced functions available for the builder to adapt to different stoves and installations

Product composition:

- control board
- extractable connectors
- connection cable main board - control panel
- control panel with antistatic cover

Safety rules

Before working on the system make follow:

- the accident prevention and room prevention rules
- the national institute rules against the work accidents
- the legal safety rules
- these instructions are only for technical personnel only

CE

Conformity declaration

EN 60730-1 50081-1 EN 60730-1 A1 50081-2

This manual is done with care and attention, but the information could be incomplete, not comprehensive or could have mistakes. For this reason the design, the information could be modified without advance notice according to the model.

TiEmme elettronica is not responsible for the incomplete or not correct information

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1 Firmware Codes and Language

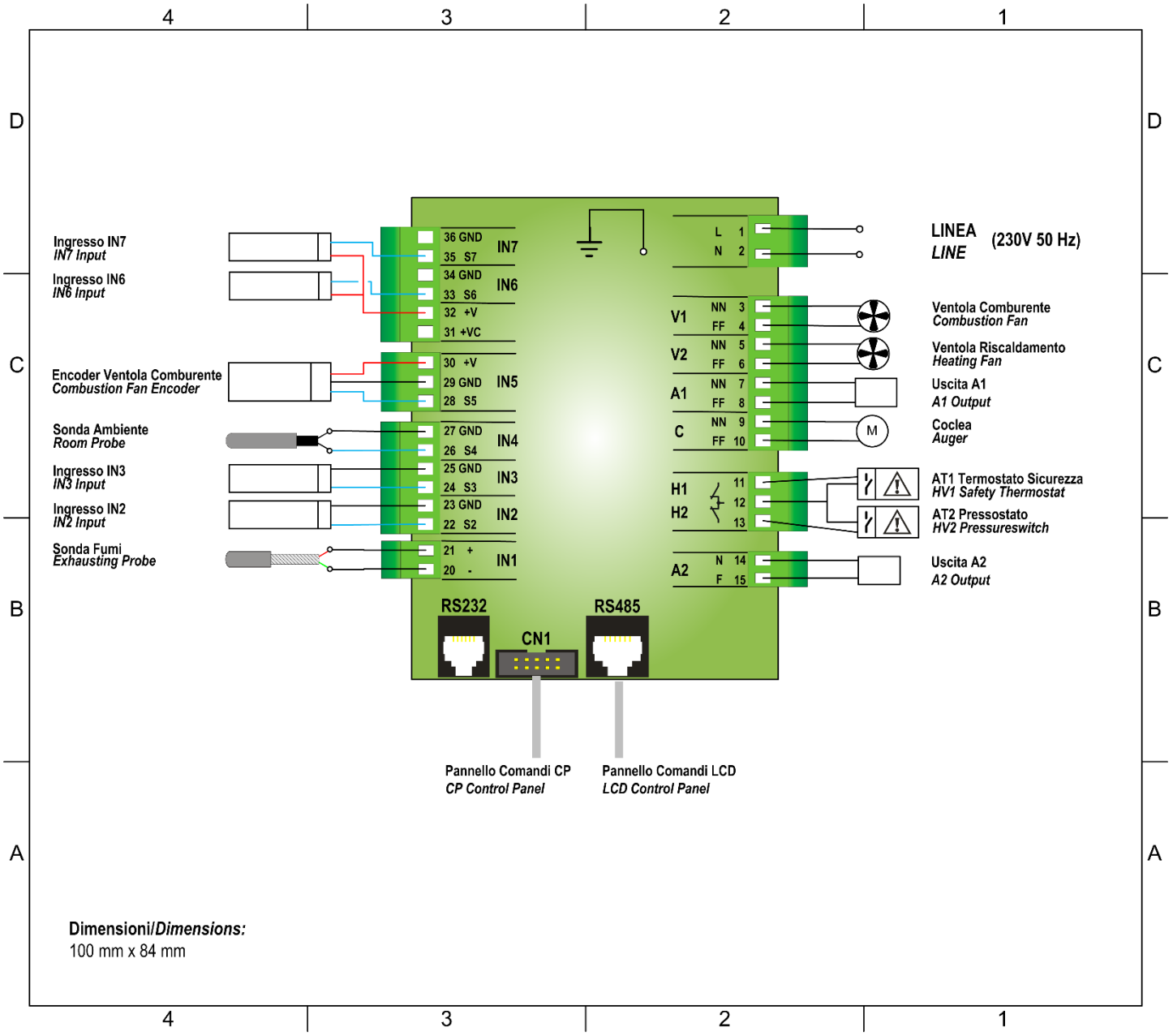
Languages K100 and K400 keyboards include the following languages:			
Italian	Polish	Dutch	Latvian
Portuguese	Serbian	Danish	Estonian
German	Romanian	Swedish	Hungarian
French	Czech	Turkish	Lithuanian
Spanish	Russian	Greek	Slovak
English	Bulgarian	Croatian	Croatian

LCD100 and LCD100 touch keyboards include the following languages:	
Set 1	*Set 2*
English	
Portuguese	
German	
French	
Spanish	
Italian	
Polish	
Serbian	
Croatian	
Slovenian	

Firmware Codes		
Control Board		
NG01	FSYSR02000001	
K Series Keyboard		
K100	FSYSF04000033	
K400	FSYSF13000018	
LCD Series Keyboard	*Set 1*	*Set 2*
LCD100 Touch	FSYSF03000096	FSYSF03000101
LCD100	FSYSF01000307	FSYSF01000312

2 Installation

2.1 Electrical connections



Dimensioni/*Dimensions:*
100 mm x 84 mm

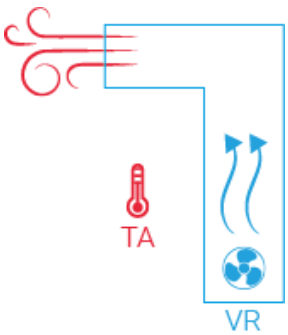
PIN		Funzione	Caratteristiche
1	L	Voltage Power Supply	230 Vac ± 10% 50/60 Hz
2	N		
3	NN	Combustion Fan	Triac Regulation 0.9 A max
4	FF		
5	NN	Heating Fan	Triac Regulation 0.9 A max
6	FF		
7	NN	Output A1 configurable (configuration's parameter: **P52**)	Triac Regulation 1.6 A max
8	FF		
9	NN	Auger Pellet Engine	Triac Regulation 0.9 A max
10	FF		
11		Safety Thermostat Input AT1	Contact ON/OFF Normally closed To Bypass if not used
12			
12		Safety Pressure switch Input AT2	Contact ON/OFF Normally closed To Bypass if not used
13			
14	N	Output A2 configurable (configuration's parameter: **P47**)	Relay 3 A max
15	F		
20	Green —	Exhaust Gas Temperature Probe	Thermocouple K: 500 or 1200 °C max
21	Red +		
22	SEG	Configurable Input IN2 (configuration's parameter: **P77**)	Analog input (probe NTC 10K) / digital
23	GND		
24	SEG	Configurable Input IN3 (configuration's parameter: **P75**)	Analog input (probe NTC 10K) / digital
25	GND		
26		Local Room Probe	NTC 10K @25 °C: 120 °C Max
27			
28	SEG	Encoder signal combustion fan	Signal TTL 0 / 5 V
29	GND		
30	+V		
31	+Vc	+10÷14 Volt	-
32	+V	+5 Volt	-
33	SEG	Configurable Input IN6 (configuration's parameter: **P78**)	Ingresso analogico / digitale
34	GND		
35	SEG	Configurable Input IN7 (configuration's parameter: **P82**)	Ingresso analogico / digitale
36	GND		
RS232		RS232 Connector	Connection for Programmer, KeyPro, Modem, PC
RS485		RS485 Connector	Connection for control panel LCD, 4Heat
CN1		Flat Connector	Connection for control panel CP

2.2 First configuration

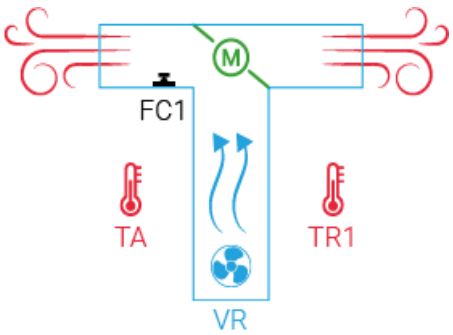
First of all set the parameter **P69**, in the Enables Menu of the System Menu), then set the configurable outputs A1 and A2 with **P52** and **P47**. Then the configurable inputs IN2, IN3, IN6 e IN7 with parameters **P77**, **P75**, **P78** e **P82**.

Heating plants (for more details see):

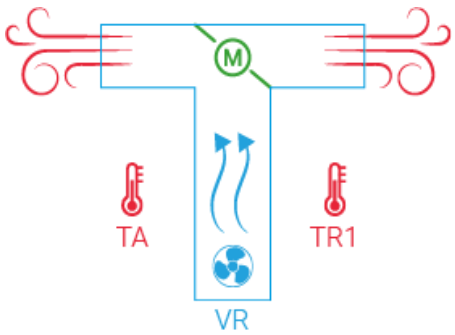
Configuration 0 (**P69**=0)

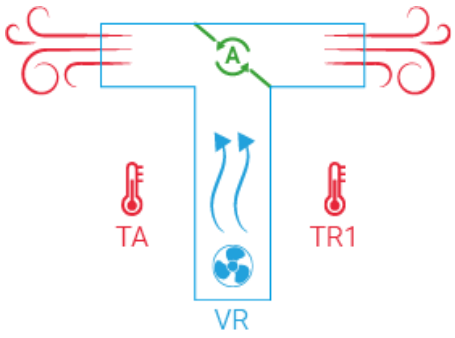
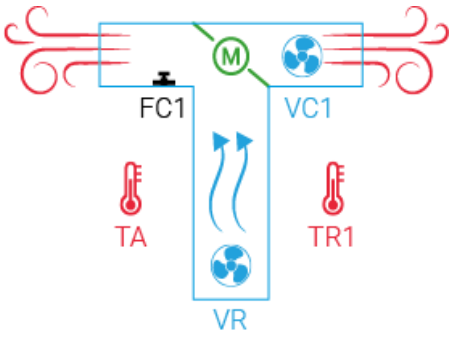
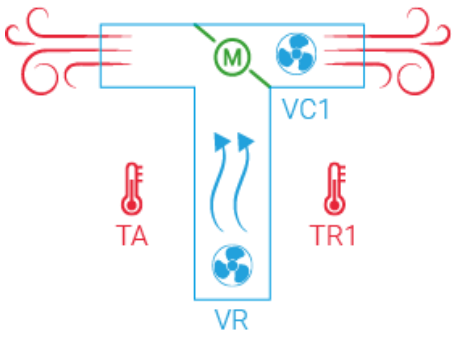
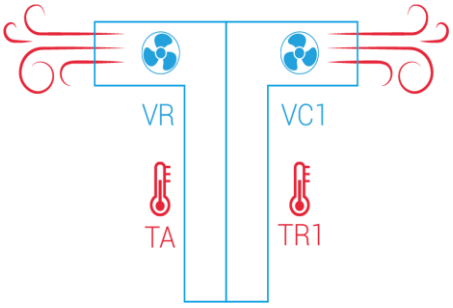


Configuration 3 (**P69**=3)



Configuration 4 (**P69**=4)



Configuration 5 (**P69**=5)	*Configuration 8* (**P69**=8)	*Configuration 10* (**P69**=10)
		
Configuration 11 (**P69**=11)		
		

Configurable Outputs (for more details see section):			
Connected Devices	*Parameter Value*	*Output*	
		*A1 (**P52**)*	*A2 (**P47**)*
Output disabled	0	√	√
Pellet Safety Valve	1	√	√
Load Pellet Engine	2	√	√
Output under thermostat	3	√	√
Heating system Selector	10	√	√
Igniter	19	√	√
Cleaning Engine	25	√	√
Canalization Fan	29	√	—

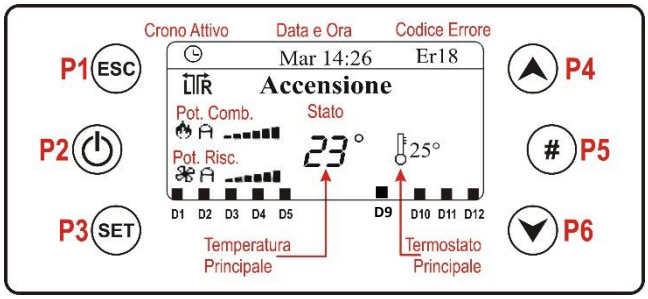
Configurable Inputs (for more details see section):					
Connected Devices	*Parameter Value*	*Input*			
		*IN2 (**P77**)*	*IN3 (**P75**)*	*IN6 (**P78**)*	*IN7 (**P82**)*
Input not used	0	√	√	√	√
Door sensor	2	√	√	√	√
Level pellet sensor	6	√	√	√	√
Cleaning engine limit switch	12	√	√	√	√
Selector's limit switch	13	√	√	√	√
Air flow sensor	16	—	—	√	√
External Chrono	17	√	√	√	√
Remote room thermostat	19	√	√	√	√
Remote room probe	20	√	√	—	—
Encoder auger	28	√	—	—	—

3 Control panel

3.1 LCD Control panels

3.1.1 LCD 100

The main screen shows:
time and date, chrono activation, combustion power, heating power, operation mode, error code, main temperature, main thermostat

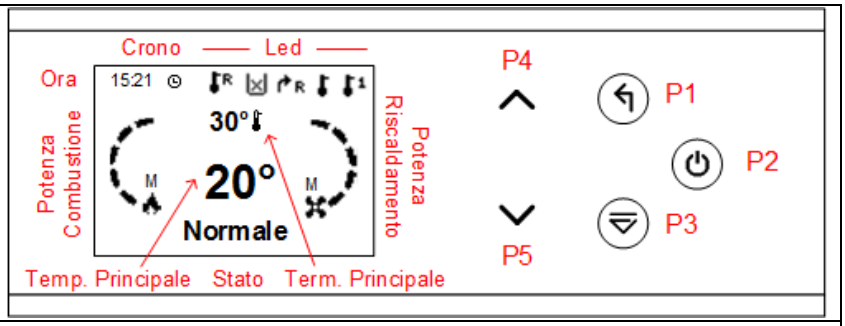


Keys	Function		
P1	Exit Menu/Submenu		
P2	Ignition/Extinguishing (press 3 sec.), Errors Reset (press 3 sec.), Enable/Disable Chrono		
P3	Enter User Menu 1/submenu, Enter User Menu 2 (press 3 sec.), Save data		
P4	Enter Visualizations Menu, Increase		
P5	Enable Chrono time slot		
P6	Enter Visualizations Menu, Decrease		
Led	**Function**	**Led**	**Function**
D1	Igniter ON	D9	Lack of material in the tank
D2	Auger engine ON	D10	Local Room Thermostat reached
D3	Heating Fan ON	D11	Remote Room Thermostat reached
D4	Ducted Fan ON	D12	External Chrono

3.2 K Control panels

3.2.1 K100

The main screen shows:
time and date, chrono activation, combustion power, heating power, operation mode, main temperature, main thermostat



Keys	Function		
P1	Exit Menu/Submenu		
P2	Ignition/Extinguishing (press 3 sec.), Errors Reset (press 3 sec.), Enable/Disable Chrono		
P3	Enter User Menu 1/submenu, Enter User Menu 2 (press 3 sec.), Save data		
P4	Enter Visualizations Menu, Increase		
P5	Enter Visualizations Menu, Decrease		
Led	**Function**	**Led**	**Function**
	External Chrono		Local Room Thermostat reached
	Lack of Pellet		Remote Room Thermostat reached
	Air flow direction		

3.2.2 K400

Home Page 1

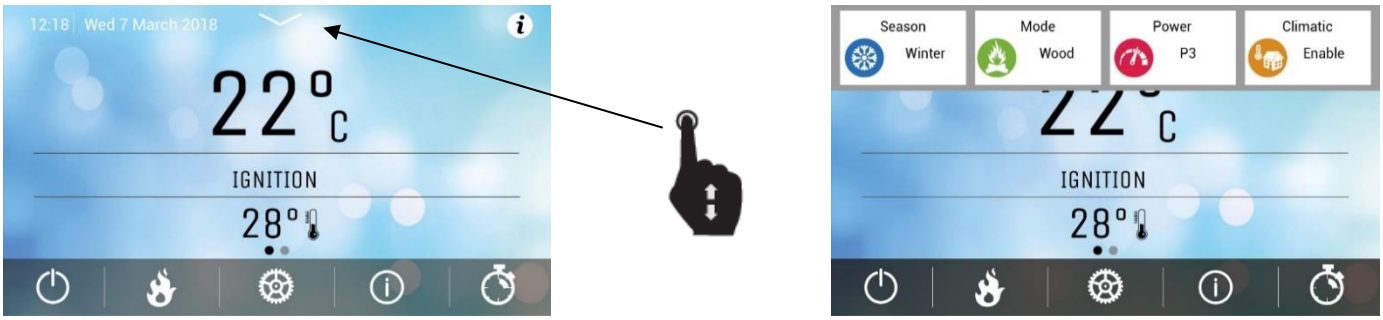
Time and date, local room temperature in use, local room thermostat in use, tool for the error report

Selection keys

	Ignition and system unlock with single click		Access to Info Menu
	Access to User Menu 1		Access to Chrono function
	Access to User Menu 2	i	Access to error list (64 recordable errors)

Main Leds

The arrow on the upper screen of the home page allows you to access to the special leds quick bar. It displays the following information:



	Set combustion power		Chrono operating mode		Remote air flow direction (if **P69**≠0, 11)
	Local air flow direction (if **P69**≠0, 11)				

Home Page 2

System Operation leds

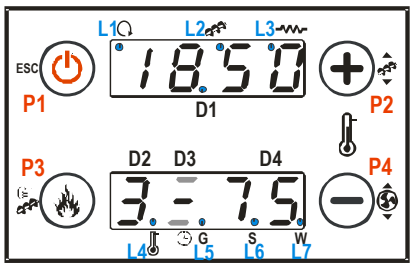
System Operation leds

	Auger		Heating Fan		Local Room Thermostat reached
	Ducted fan		External Chrono reached		Remote Room Thermostat reached
	Igniter		Lack of fuel in the tank		

3.3 CP Control Panels

3.3.1 CP110

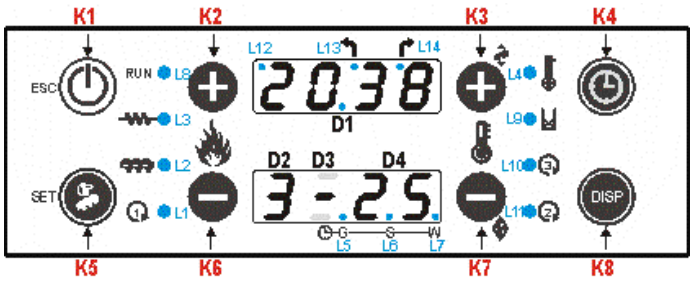
Values shown on the main frame:
*Display **D1***: time, system state, error, Menu, Submenu, parameter value
*Display **D2***: power, parameter code
*Display **D3***: recipe
*Display **D4***: main temperature, parameter code



Key	Function					
	Click			Long Press		
P1	Visualisations / Exit Menu			Ignition / Extinguishing / Block reset		
P2	Thermostat modify (+) / Increase data			Pellet loading correction		
P3	Combustion Power modify / Save data			Manual pellet loading		
P4	Thermostat modify (-) / Decrease data			Combustion Fan speed correction		
Led	**Function**		**Led**		**Function**	
L1		Heating Fan On	L5		G	Daily program selected
L2		Auger On	L6		S	Weekly program selected
L3		Ignition Resistance On	L7		W	Week End program selected
L4		thermostat temperature reached				

3.3.2 CP120

Values shown on the main frame
*Display **D1***: time, system state, error, Menu, Submenu, parameter value
*Display **D2***: power, parameter code
*Display **D3***: recipe
*Display **D4***: main temperature, parameter code



Key	Function					
	Click			Long Press		
K1	Exit Menu			Ignition / Extinguishing / Block reset		
K2	Combustion Power modify (+)			-		
K3	Thermostat modify (+) / Increase data			Pellet loading correction		
K4	-			Enable Chrono time slot		
K5	Input User Menu 2 / Save data			Manual pellet loading		
K6	Combustion Power modify (-)			-		
K7	Thermostat modify (-) / Decrease data			Combustion Fan speed correction		
K8	Visualizations			-		
Led	**Function**		**Led**		**Function**	
L1		Heating Fan On	L8	**RUN**		Led On: system On Led blinking: system in Extinguishing
L2		Auger On	L9			Led On: lack of pellet in the tank Loading Engine On
L3		Ignition Resistance On	L10			Not used
L4		thermostat temperature reached	L11			Canalization Fan On
L5	G	Daily program selected	L12			Not used
L6	S	Weekly program selected	L13			Air flow direction in local
L7	W	Week End program selected	L14			Air flow direction in remote

3.3.3 Functioning state visualization

State	Code	State	Code	State	Code
Off	**-**	Ignition-Variable ignition	**On 4**	Safety	**SAF**
Check Up	**ChEc**	Stabilization	**On 5**	Extinguishing	**OFF**
Ignition-Pre-heating	**On 1**	Run mode	**-**	Block	**Alt**
Ignition-Preload	**On 2**	Modulation	**Mod**	Ignition Recovery	**rEc**
Ignition-Fixed ignition	**On 3**	Standby	**Stby**		

3.4 Alarms

Description	Code	
	LCD and K	*CP*
Error Safety High Voltage 1: signalled also with the system Off	**Er01**	**Er01**
Error Safety High Voltage 2: signalled only if the Combustion Fan is On	**Er02**	**Er02**
Extinguishing for exhaust under temperature	**Er03**	**Er03**
Extinguishing for exhaust over temperature	**Er05**	**Er05**
Encoder fan error: no Encoder signal (in case of **P25**=1 or 2)	**Er07**	**Er07**
Encoder fan error: Combustion Fan regulation failed (in case of **P25**=1 or 2)	**Er08**	**Er08**
Day and time not correct due to prolonged absence of power supply	**Er11**	**Er11**
Failed ignition	**Er12**	**Er12**
Lack of voltage supply	**Er15**	**Er15**
Communication error RS485	**Er16**	**Er16**
Air flow regulator error	**Er17**	**Er17**
Run out of pellet	**Er18**	**Er18**
Cleaning engine damaged	**Er25**	**Er25**
Air Flow sensor damaged	**Er39**	**Er39**
Minimum air flow in Check Up not reached	**Er41**	**Er41**
Maximum air flow reached (**FL40**)	**Er42**	**Er42**
Open door error	**Er44**	**Er44**
Auger Encoder error: no Encoder signal (if **P81**=1 or 2)	**Er47**	**Er47**
Auger Encoder error: auger speed regulation failed (if **P81**=1 or 2)	**Er48**	**Er48**
Service error. It notifies that the planned hours of functioning (parameter **T66**) is reached. It is necessary to call for service.	**Service**	**SErU**

3.5 Messages

Description	Code	
	LCD and K	*CP*
Probes anomaly during the control in Check Up		**Sond**
This message notifies that the planned hours of functioning (parameter **T67**) is reached. It is necessary to clean the stove		**CLr**
Door Open		**Port**
The message appears if the system is turned off during Ignition (after Preload) by an external device: the system will stop only when it goes in Run Mode.		**OFF dEL**
Lack of communication between the LCD or K control panels and the control board		**-**
Periodic Cleaning in progress		**PCLr**

*only for LCD and K displays

3.6 Visualizations

Display		Units	Descriptions
LCD and K	*CP*		
T. Exhaust	tF	[°C]	Exhaust temperature
T. Room	tA	[°C]	Room temperature; visible if **A19**=1
T. Room Remote	tr	[°C]	Remote room temperature; visible if the remote probe is configured and **P69** is major than 0
Air flow	FL	-	Primary air flow speed; visible if **A24** is different from 5
Fan	UF	[rpm]	Combustion fan speed; visible if **P25** is different from 0
Auger	Co	[s]	Time auger On; visible if **P81** is different from 0
Recipe *	-	[nr]	Selected combustion recipe; visible if **P04** is major than 1
Service	St	[h]	Left timer before the system shows the message '*Service*'; visible if **T66** is major than 0.
Cleaning	St2	[h]	Left timer before to clean the stove; visible if **T67** is major than 0.

Working hours*	-	[nr]	Time of working hours in Run mode, Modulation and Safety.
Ignitions*	-	[nr]	Numbers of failed ignitions
-	FC **		Firmware code and revision: FYSr02000001.x.y
Prod. Code 559-xyzt			Product code

* only for LCD and K ** only for CP

4 Menu

4.1 LCD and K Control Panels menu

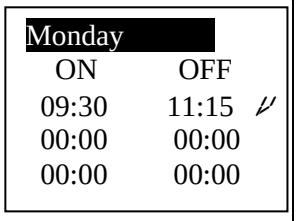
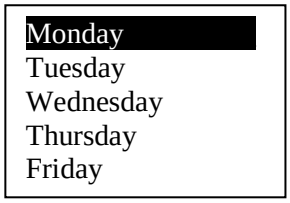
4.1.1 User Menu 1

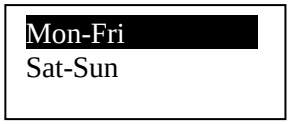
<table>
<tr><td>Power</td><td>Combustion
Entering this menu, you can change the system combustion power. You can set it in automatic or manual mode: in the first case, the system chooses the combustion power; in the second case, the user selects the combustion power of its choice. On the left side of the screen the combustion mode is displayed (A= automatic combustion, M= manual combustion) and the system working power.</td></tr>
<tr><td></td><td>Heating
Entering this menu, you can change the heating power. You can set it in automatic or manual mode: in the first case, the system chooses the combustion power; in the second case, the user selects the combustion power of its choice. On the right side of the screen the heating mode is displayed (A=automatic, M=manual) and the corresponding power. Setting the parameter A04=1 the menu is not displayed.</td></tr>
<tr><td></td><td>Ducting
Menu that allows changing the value of the Ducted fan power. It is displayed only if a heating plant including the second heating fan is selected.</td></tr>
<tr><td>Thermostats</td><td>Room
Menu to change the value of the main thermostat. It is displayed only if A19=1.</td></tr>
<tr><td></td><td>Remote Room
Menu that allows changing the value of the Remote Room Thermostat; it is displayed only if an input is set as Remote Room Probe and P69 is greater than 0.</td></tr>
<tr><td>Selector</td><td>It allows changing the position of the Selector and thus changing the direction of the heating airflow (Local=air flow directed to the room where the stove is, Remote=air flow directed to the remote room). It is displayed only if a heating plant including a Selector is selected.</td></tr>
<tr><td>Recipe</td><td>Menu for the selection of the Combustion Recipe; if you set the parameter P04=1 the menu is not displayed.</td></tr>
<tr><td>Chrono</td><td>It allows programming and enabling the system ignitions/extinguishing. It is composed by 2 submenu.

Modality
It allows selecting the modality of your choice, or disabling all the programs.
• Enter the edit mode with the key P3
• Select the modality of your choice (Daily, Weekly or Weekend)
• enable/disable the chrono mode with the key P2
• save the settings with the key P3

Program
The system includes three kind of programs: Daily, Weekly, Weekend. After selecting the program of your choice:
• select the time to program with the keys P6 or P4 (P5 or P4 for the K100)
• enter the edit mode (the selected time flashes) with the key P3
• change the time with the keys P6 or P4 (P5 o P4 for the K100)
• save the program with the key P3
• enable (a “V” is displayed) or disable the time slot (a “V” is not displayed) pressing the key P5 (P2 for the K100)

Daily
Select the day of the week you want to program and set ignition and extinguishing times.
Program across Midnight
Set the ON time of the first day at the desired value: Ex. 20.30
Set the OFF time of the first day at 23:59
Set the ON time of the following day at a 00:00
Set the OFF time of the following day at the desired value: Ex. 6:30

 
 
  </td></tr>
</table>

	The system will switch on Tuesday at 20.30 and will switch off on Wednesday at 6.30 *Weekly* The programs are the same for all the days of the week. *Weekend* Select between Monday-Friday and Saturday-Sunday slots and set ignition and extinguishing time.	
Load	The procedure switch on the manual load of the pellet and it is interrupted automatically after 300 seconds. The system must be in Off state for the function to be performed.	

4.1.2 User menu 2

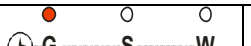
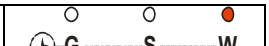
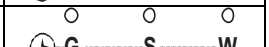
Settings	**Time and date** It allows setting current day, month, year and time
	Language Menu to edit the keyboard language
	Radio control *OFF* No Radio control included *ON* A SYTX4 radio control is used
	Cleaning Reset Menu to reset the 'System Maintenance 2'. It is displayed if **T67**>0.
	Auger Calibration It allows changing the default values of the speed or the Auger On times. The values are included within the range –7÷7. The default value is 0. The menu is displayed only if **A64**=1.
	Fan Calibration It allows changing the default values of the Combustion Fan speed. Settable values are included within the range –7÷7. The default value is 0. The menu is displayed only if **A64**=1.
Display Menu	**Brightness *** Menu to adjust the display brightness
	Contrast ** Menu to adjust the display contrast
	Minimum Brightness Menu to adjust the display brightness when commands are not used
	Keyboard Address Menu protected by password (*the password is 1810*). With this menu it is possible to set the address of the RS485 node. Inside bus 485 it is not possible to have more than one node with the same address.
	Sound * Menu to enable or disable the sound of the control panel
	Nodes list Menu that shows the board communication address, the type of board and the firmware version. The kind of board that can be shown are: *MSTR* Master *INP* Inputs *KEYB* Keyboard *OUT* Outputs *CMPS* Composite *SENS* Sensors *COM* Comunicazione
	Acoustic Alarm ** Menu to enable/disable the acoustic alarm
	Wallpaper * This Menu allows you to change the control panel wallpaper
System Menu	Menu for the access to technical staff reserved data. It is protected by password (*default password: 0000*).

4.2 User menu for CP control panels

4.2.1 User menu 1

Combustion Power Setting	Click on **P3** or **K2/K6** button: the **D2** display blinks. With other click of the same button the power is changed. Ex.: 1–2–3–4–5–A (A=Automatic combustion). After 5 seconds the new value is saved and the display shows as normal.

Manual Pellet Loading	The long pressure of button **P3** or **K5** activates the Pellet Manual Loading with activation of Auger engine in continuous way. The bottom display shows the word **LoAd**, the up display shows the elapsed loading time. To stop the loading push any button. The loading stops automatically after 300 seconds. Enabled only if **A48**=0.
Pellet Loading Correction	The long pressure of **P2** or **K3** button activates this function (You have to do it two times to access the modify modality). The bottom display shows **PELL**, the upper display the value. With buttons **P2**/**P4** or **K3**/**K7** the value is increased or decreased; the default set is '0'. After 5 seconds the new value is saved and the display shows as normal. Enabled only if **A64**=1.
Combustion Fan Correction	The long pressure of **P4** or **K7** button activates this function (You have to do it two times to access the modify modality). The bottom display shows **Uent**, the upper display the value. With buttons **P2**/**P4** or **K3**/**K7** the value is increased or decreased; the default set is '0'. After 5 seconds the new value is saved and the display shows as normal. Enabled only if **A64**=1.
Thermostat Setting	The current value of the thermostat is shown in the lower display.
Enable Chrono (only for CP120 control panel)	With the long pressure of **K4** button it is possible to select the Chrono Modality

Daily Program		Week-End Program	
Weekly Program		Chrono disabled	

4.2.1 User menu 2

The access to the menu is done by pressing **P3** and **P4** at the same time (keyboard CP110) or **K5** (keyboard CP120)

Heating Power (**Air**)

This menu allows to change the heating power, if **A04=1** the menu is not visible.

Heating	*Description*
1–Number of user power	Power manually set from 1 to Number of User Power
Auto	Heating Power set automatic by the system (according to **P06** value)

Ducting Power (Can)

It allows changing the Ducted Fan power. It is displayed only if a heating plant including a second heating fan is selected.

Heating	*Description*
1–Number of user power	Power manually set from 1 to Number of User Power
Auto	Power set automatically according to **P07** value

Selector Menu (**SEL**)

This menu allows to manage the position of the Selector and change the heating air flow direction.

Display	*Description*
LoC	Air Flow in the room where is the stove.
rEM	Air Flow in the remote room

Remote room thermostat (**rEM**)

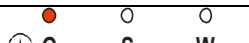
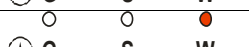
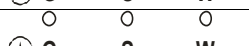
This menu allows to modify the value of the Remote Room Thermostat, it is visible only if one input is configured as remote room probe and is **P69** major than 0.

Chrono (**Cron**)

This menu allows to set the time to turn on/off the system, it has two submenus:

-Chrono Enable Menu

This menu allows to select the chrono modality. On display appears the label **ModE**.

MODALITY	*LED*
Gior: Daily Program	
Sett: Weekly Program	
FiSE: Week-End Program	
OFF: Programs Disabled	

-Programming Time Ranges Menu

On display appears the label **ProG**. It has 3 submenus, one for each program modality:
Daily: it allows to set 3 programs for each day of the week
Weekly: it allows to set 3 programs for all days of the week

Week-End: it allows to set 3 programs for Monday-Friday and 3 programs for Saturday-Sunday

VISUALISATIONS	*DISPLAY*
Daily Modality: the day	**M o**
Weekly Modality: Monday-Sunday	**M S**
Week-End Modality: Monday-Friday Saturday-Sunday	**M F** **S S**
For On Timer is on the bottom segment on display **D2**	**1 M o**
For Off Timer is on the above segment on display **D2**	**1 M o**

Instructions

For each program, it is necessary to set the time on and the time off.

DESCRIPTION	*DISPLAY*
1) Scroll with the buttons **P2**/**P4** or **K3**/**K7** until the wished Submenu and push the button **P3** or **K5**	**G i o r n**
2) Push the buttons **P2**/**P4** or **K3**/**K7** to select one of the 3 available programs	**1 M o**
3) Push the button **P1** or **K4** for 3 seconds	**0 0 . 0 0** **1 M o**
4) Select the ignition time	
5) Push the button **P3** or **K5** to enter in modify mode: the selected value (hours or minutes) blinks. Push the button **P3** or **K5** to switch between hours and minutes, **P2**/**P4** o **K3**/**K7** to modify the value.	**0 1 . 0 0** **1 M o**
6) Push the button **P3** or **K5** to save	**2 1 . 3 0** **1 M o**
7) Select with the button **P2** or **K3** the Off Timer and repeat the procedure from point 5	**0 0 . 0 0** **1 M o**

For each time is possible to modify minutes with intervals of 15 minutes (e.g.: 20:00, 20:15, 20:30, 20:45).

Only for 11 p.m. is possible to increase minutes from 45 to 59, in order to get an ignition around midnight.

Program Chrono across Midnight

Set for a programming time of a day of the week the time OFF at 23:59. Set the programming time of the following day at the time of ON at 00:00.

Example

Monday Program			
ON	**2 2 . 0 0** **1 M o**	**2 3 . 5 9** **1 M o**	OFF
Tuesday Program			
ON	**0 0 . 0 0** **1 T u**	**0 7 . 0 0** **1 T u**	OFF

Combustion Recipe (**ricE**)

Menu to select the Combustion Recipe. The maximum value is the number of recipes visible to the user. This value can be set in Default Settings Menu (parameter **P04**). If the parameter **P04**=1 the Menu isn't visible.

Clock (**oroL**)

This Menu allows to set time and date. The above display shows hour and minutes, the under display shows the day of the week.

DESCRIPTION	*DISPLAY*
Push the button **P3** or **K5** to enter editing. The selected value (hours, minutes, days) blinks. To change the value use the **P2**/**P4** or **K3**/**K7** button. Push the button **P3** or **K5** to switch to modify the other parameters. Push again **P3** or **K5** to save the set value.	**0 7 . 3 3** **M o**

Remote Control (**TELE**)

This Menu allows to enable and disable the Remote Control SYTX.

Cleaning Reset (**rCLr**)

Menu for the reset of the "System Maintenance 2" function. It is visible only if **T67**>0.

Technical Menu (**TPAr**)

This menu allows to enter in the Technical Menu. The access is protected by password; the **default password is "0000"**.

5 Functioning states

5.1 Block

Controls	*Combustion Fan*	*Auger*	*Igniter*
To exit press the button **P2** for 3 seconds: if there are no more block conditions, the system will go in **Off** state.	**OFF**	**OFF**	**OFF**

5.2 Off

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
	Exhaust temperature>Thermostat **Th01**	→ goes in **Extinguishing**	**OFF**	**OFF**	**OFF**

5.3 Check Up

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T01	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	**Max speed**	**OFF**	**OFF**

5.4 Ignition

5.4.1 Pre-heating

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T02	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	**V24**	**OFF**	**ON**

5.4.2 Preload

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T03	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	**V01**	**ON**	**ON**
T29				**OFF**	

5.4.3 Fixed phase

During the phase the exhaust temperature minimum value is saved by system					
Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T04	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	**V01**	**C01**	**ON**

5.4.4 Variable phase

During the phase the exhaust temperature minimum value is saved by system					
Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T05	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	I Ignition: **V01** II Ignition: **V10**	I Ignition: **C01** II Ignition: **C10**	**ON**
	Exhaust temperature>Thermostat **Th06 and** Exhaust temperature>minimum value saved+**D41**	→ goes in **Stabilization**			
Control after **T05**	Exhaust temperature<Thermostat **Th06 or** Exhaust temperature< minimum value saved+**D41**	→ **Ignition Recover** from Variable Phase			
		→ goes in **Extinguishing** with error **Er12** in case of no more number of attempts			

5.4.5 Stabilization

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T06	Exhaust temperature>Thermostat **Th09**	→ goes in **Normal-Run Mode**	**V02**	**C02**	**ON** if exhaust temperature<**Th02**
	Exhaust temperature>Thermostat **Th06**	→ **Ignition Recover** from Variable Phase			
		→ goes in **Extinguishing** with error **Er12** in case of no more number of attempts			
Control after **T06**	Exhaust temperature>Thermostat **Th06**+**D01**	→ goes in **Normal-Run Mode**			
	Exhaust temperature<Thermostat **Th06**+**D01**	→ **Ignition Recover** from Variable Phase			
		→ goes in **Extinguishing** with error **Er12** in case of no more number of attempts			

5.5 Ignition recovery

Wait

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13 **Extinguishing** Control after **T13**	Exhaust temperature>Thermostat **Th01**	→ starts Timer **T13**	**V09**	**OFF**	**OFF**
	Exhaust temperature>Thermostat **Th01**	→ wait			

Cleaning Engine

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase is performed after the Wait time and it is present only if one output is configured as Cleaning Engine and ends when the motor stops.	**OFF**	**OFF**	**OFF**

Final cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16 **Final Cleaning**	Exhaust temperature<Thermostat **Th01**	→ starts Timer **T16** Final cleaning	**Max speed**	**OFF**	**OFF**
Control after **T16**	Exhaust temperature<Thermostat **Th01**	→ goes in **Check Up**			

5.6 Normal - Run Mode

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T14 Control after **T14**	Exhaust temperature<Thermostat **Th03 or** Exhaust temperature<**Extinguishing Thermostat** for the used power	→ starts Timer **T14** Pre-extinguishing wait	**User power**	**User power**	**OFF**
	→ goes in **Extinguishing** with error **Er03**				
	Exhaust temperature>Thermostat **Th07**	→ goes in **Modulation**			
A01=**1** or **2**	• **P69**=0, 11 room temperature>**Room Thermostat** • **P69**=1÷10 and air flow direction=Local local room temperature>**Local Room Thermostat** • **P69**=1÷10 and air flow direction=Remote * remote room temperature>**Remote Room Thermostat**	→ goes in **Modulation**			
	Exhaust temperature>Thermostat **Th08**	→ goes in **Safety**			

5.7 Modulation

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T14	Exhaust temperature<Thermostat **Th03 or** Exhaust temperature<**Extinguishing Thermostat** for the used power	→ starts Timer **T14** Pre-extinguishing wait	**V11**	**C11**	**OFF**
Control after **T14**	→ goes in **Extinguishing** with error **Er03**				
	Exhaust temperature>Thermostat **Th08**	→ goes in **Safety**			
A01=2	If for the time **T43 and** • **P69**=0, 11 room temperature>**used Room Thermostat**+(**D23** or **D27**) • **P69**=1÷10 and air flow direction=Local local room temperature>**Local Room Thermostat**+**D23** • **P69**=1÷10 and air flow direction=Remote * remote room temperature>**Remote Room Thermostat**+**D27**	→ goes in **Standby**			

5.8 STANDBY

When the conditions that took the system in Standby don't stand anymore, **T11** timer starts. When the timer expires the system goes in Check Up. If the exhaust temperature > **Th08** thermostat the system goes in Safety.

Wait

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13 **Extinguishing** Control after **T13**	Exhaust temperature>Thermostat **Th28**	→ starts Timer **T13**	**V09**	**OFF**	**OFF**
	Exhaust temperature>Thermostat **Th28**	→ wait			

Cleaning Engine

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase is performed after the Wait time and it is present only if one output is configured as Cleaning Engine and ends when the motor stops.	**OFF**	**OFF**	**OFF**

Final cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16 **Final Cleaning** Control after **T16**	Exhaust temperature<Thermostat **Th28**	→ starts Timer **T16**	**Max speed**		
	→ goes in **Off Standby**		**OFF**		

5.9 SAFETY

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T15	Exhaust temperature<Thermostat **Th08**	→ comes back to the previous state	**V09** if before was in **Standby**, it continuous with the same power if it was in **Modulation**	**OFF**	**OFF**
Control after **T15**	→ goes in **Extinguishing** with error **Er05**				

5.10 EXTINGUISHING

Wait

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13 **Extinguishing** Control after **T13**	Exhaust temperature>Thermostat **Th01**	→ starts Timer **T13**	**V09**	**OFF**	**OFF**
	Exhaust temperature>Thermostat **Th01**	→ wait			

Cleaning Engine

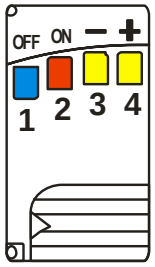
Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase is performed after the Wait time and it is present only if one output is configured as Cleaning Engine and ends when the motor stops.	**OFF**	**OFF**	**OFF**

Final Cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16	Exhaust temperature>Thermostat **Th01**	→ starts Timer **T16**	**Max speed**		
Control after **T16**	→ goes in **Off** with no errors		**OFF**		
	→ goes in **Block** with errors				

6 FUNCTIONS

6.1 RADIO CONTROL SYTX



Keys

Key 1: extinguishing
Key 2: ignition
key 3 and 4: decrease/increase combustion power

Change code

Radio control:

- Open the back sliding the cover toward right
- Modify the dip-switch configuration and close again

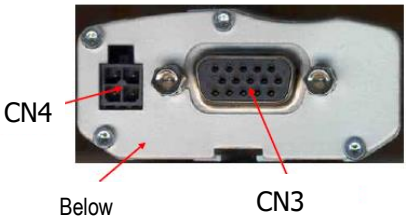
On control board:

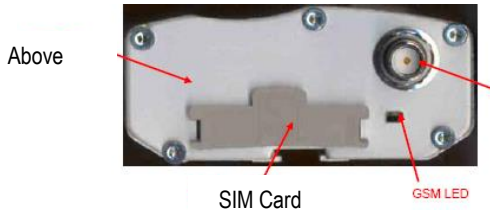
- Cut off the power supply of the control board
- Power up again while pressing one key of the radio control for 5 seconds until a beep signal from the control board comes out.

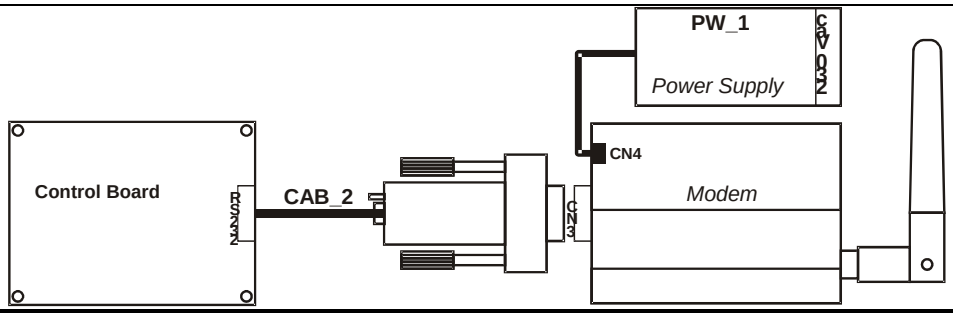
6.2 MODEM

The system manages a modem module (given on demand) for the dialogue with the stove through SMS to operate the Ignition, Extinguishing, State's request and have information about the Block/Alarms conditions. The Modem is connected to the Control Board's port RS232 with cables and connectors given; it is supplied with a AC/DC Power Supply unit.

- Use a SIM card in the Modem enabled to the traffic GSM data
- Disable the PIN request from the SIM
- The insertion and removal of the SIM card must be done with the Modem NOT supplied







The modem status is defined by two LED:

LED GSM	*LED Activity*	*Modem State*
ON	LED on fixed	The modem is powered, it is ready to function but not yet recognized by the network; the PIN code has not yet entered or the antenna is not connected
	LED flashing (once every 2 seconds)	The modem is powered, the PIN code is active, the modem is recognized by the network and is ready to make or receive a call
	LED flashing (once a second)	The modem is powered and currently in communication (Voice, Data or Fax)
OFF	LED off	The modem is not powered or is in the reset phase

The user can send an SMS to the Modem's SIM with a command word written both capital and small

Start	To start Ignition from system Off; the Modem sends back a message to the number from which it received the command with the system status (On, Off or Block). This feature is available only in Pellet modality
Stop	To start Extinguishing from system in an On state; the Modem sends back a message to the number from which it received the command with the system status (On, Off or Block).
Status	To ask the system's state; the Modem sends back a message to the number from which it received the command with the status (On, Off or Block).

Learn	To learn the number to send an SMS in case of Block; if there is a Block condition, the Modem automatically sends a message to the learnt number with the system's state and the alarm error code.
Reset	To unblock the system

SMS	*System state*	*SMS*	*System state*
Block	Block, extinguishing with error message	Standby	Standby
Off	Off, Extinguishing, Extinguishing in ignition	On	Other states

6.3 Combustion management

6.3.1 Probe or room thermostat

Setting the parameter **A19** it is possible to choose whether to use a local room probe or thermostat.
Setting the parameter **P75**, **P77**, **P78** or **P82** it is possible to choose whether to use a remote room probe or thermostat.
Setting the parameter Enables **A01** it is possible to:

Room Probe

- **A01**=0
  Room Thermostat not reached: the system goes in Ignition
  Room Thermostat reached: il the system goes in Extinguishing
- **A01**=1
  Room Thermostat not reached: the system goes in Run Mode
  Room Thermostat reached: the system goes in Modulation
- **A01**=2
  Room Thermostat not reached: the system goes in Run Mode
  Room Thermostat reached: the system goes in Standby

Room Thermostat

- **A01**=0
  contact closed: the system goes in Ignition
  contact open: the system goes in Extinguishing
- **A01**=1
  contact closed: the system goes in Run Mode
  contact open: the system goes in Modulation
- **A01**=2
  contact closed: the system goes in Run Mode
  contact open: the system goes in Standby

If **A01**=1, 2 and the input is not used short circuit the relative pins.

6.3.2 Room thermostat selection

Depending on the choice of heating plant (**P69** parameter), the system uses as Room Thermostat: the Local Room Thermostat or the Remote Room Thermostat or both:

- **P69**=0
  The system uses only the room thermostat present both for combustion and to enter in Modulation and Standby.
- **P69**=1, 2, 3, 4, 5, 6, 7, 8, 9, 10
  If the air flow is directed in the room where the stove is present, the Local Room Thermostat is used; if the air flow is directed in a remote room, the Remote Room Thermostat is used.
- **P69**=11

The Remote Thermostat is taken into account by the system if Canalization Fan 1 is activated by the user in the Heating Management Menu. For combustion purposes the local thermostat is used; to enter in Standby and Modulation both local and remote thermostats are taken into account.

6.3.3 Combustion fan speed management

The parameter **P25** sets the modality of speed regulation of the Combustion Fan.	
P25=0	Exhaust Fan without Encoder: the speed is defined by the set voltage value [V].
P25=1	Exhaust Fan with Encoder: the speed is defined by the set number of turns [RPM]. In case of signal presence but regulation failed, the system goes in Block with **Er08** alarm. In case of sensor break with absence of the signal, the system goes in Block with **Er07** alarm.
P25=2	Exhaust Fan with Encoder: the speed is defined by the set number of turns [RPM]. In case of signal presence but regulation failed, the system goes in Block with **Er08** alarm. In case of sensor break with absence of the signal, the system goes in Block with **Er07** alarm. After the reset of the Block the system goes automatically to **P25**=0.

6.3.4 Auger speed management

The parameter **P81** sets the modality of Auger regulation.	
P81=0	Auger without Encoder managed in pause-work (unit express in seconds). The regulation step is 0.1 second.

P81=1	Auger with Encoder: the speed is defined by the set number of turns [RPM]. In case of signal presence but regulation failed, the system goes in Block with **Er48** alarm. In case of sensor break with absence of the signal, the system goes in Block with **Er47** alarm.
P81=2	Auger with Encoder: the speed is defined by the set number of turns [RPM]. In case of signal presence but regulation failed, the system goes in Block with **Er48** alarm. In case of sensor break with absence of the signal, the system goes in Block with **Er47** alarm. After the reset of the Block, the system goes automatically to **P81**=0.

6.3.5 COMBUSTION STANDBY

The Standby is a temporary shutdown of the flame due to the attainment of the target temperature of the medium to be heated. The conditions to go in Standby are managed by parameter **A01**; depending on the choice of the heating plant (**P69** parameter), it has:

- **P69**=0

A01	*Control*	*System State*
1, 2	room temperature>Room Thermostat	Modulation
2	room temperature>Room Thermostat+**D23** for **T43** seconds	Standby

- **P69**=1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Hot air flow direction	*A01*	*Control*	*System State*
Remote*	1, 2	remote room temperature>Remote Room Thermostat **or** local room temperature>**Th53** Thermostat and **A19**=1	Modulation
Local	2	local room temperature>(Local Room Thermostat+**D23**) for **T43** seconds	Standby
Remote*	2	remote room temperature>(Remote Room Thermostat+**D27**) for **T43** seconds **or** local room temperature>**Th53** Thermostat and **A19**=1	Standby

***** if permitted by the heating plant chosen

To exit Standby set the values of the used thermostats' hysteresis. The system exits from standby if:
room temperature<(used Room Thermostat–hysteresis–1)

6.3.6 AUTOMATIC COMBUSTION POWER MANAGEMENT

If the automatic combustion is set, the system selects the combustion power. The power is chosen considering the difference between the room temperature and Room Thermostat. Depending on choice of heating plant (**P69** parameter):

- **P69**=1, 2, 3, 4, 5, 6, 7, 8, 9, 10
  The combustion depends on Local or Remote 1 Room Thermostat according to the direction of heating air flow.
  Local Flow Direction
  - room temperature≤**Local Room Thermostat**–**D05**→ the system goes to the maximum available power
  - **Local Room Thermostat**–**D05**<room temperature<**Local Room Thermostat** → the combustion power is chosen proportionally according the difference between the room temperature and Room Thermostat
  - room temperature≥**Local Room Thermostat** → the system goes to Modulation Power

  Remot Flow Direction
  - room temperature≤**Remote Room Thermostat**–**D13**→ the system goes to the maximum available power
  - **Remote Room Thermostat**–**D13**<room temperature<**Remote Room Thermostat** → the combustion power is chosen proportionally according the difference between the room temperature and Room Thermostat
  - room temperature≥**Remote Room Thermostat** → the system goes to Modulation Power
- **P69**=0, 11
  The combustion depends on Local Room Thermostat

The **D05** and **D13** parameters have to be multiple of combustion number minus one.

Example: Modality=[A], **Room Thermostat** =25°C, **D05**=5 °C, **P03**=5

Room temperature °C	≤ 20	21	22	23	24	≥ 25
Working power	Power 5	Power 4	Power 3	Power 2	Power 1	Power 1

6.3.7 MANAGEMENT DELAY COMBUSTION POWER CHANGE

When the system exits from the Ignition and goes in **Normal**, the combustion power, starting from the Power 1, reaches the target one increasing the value with the delay time as the timer **T18**.
The other manual or automatic power changes are managed and actuated with the delay time as timer **T17**.

6.3.8 PELLET LOAD CORRECTION MANAGEMENT

The user sets the pellet loading ON times/speed with Step – 7 ÷ 7. The parameter **P15** is the percentage value of the single step and is for all the default Working Powers. The values are considered in the range **P27**÷**P05**.

Example	**P15**=10%	**C03**=2,0	**C04**=3,0	**C05**=4,0	**C06**=5,0	**C07**=6,0	**C11**=1,0
	Step= --1	**C03**=1,8	**C04**=2,7	**C05**=3,6	**C06**=4,5	**C07**=5,4	**C11**=0,9

6.3.9 Combustion Fan Correction Management

The user sets the Combustion fan Speed with Step – 7 ÷ 7. The parameter **P16** is the percentage value of the single step ad is for all the default Working Powers. The values are considered in the range **P14**÷**P30**.							
Example	**P16**=5%	**V03**=1000	**V04**=1200	**V05**=1400	**V06**=1600	**V07**=1800	**V11**=900
	Step= +3	**V03**=1150	**V04**=1380	**V05**=1610	**V06**=1840	**V07**=2070	**V11**=1035

6.3.10 Primary air regulator

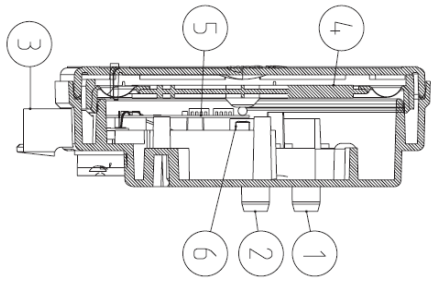
It detects the air-flow speed in the induction pipe of the stove/boiler.
The reading range is 0÷2000. If the probe is not connected the speed value will be 0.

Connections:

Sensor	IN6	IN7
+Vc (+12V) / +V(+5V) *Out* *-GND*	pin 31 / pin32 pin 33 pin 34	pin 31 / pin32 pin 35 pin 36

A Differential Air Pressure Sensor or Air Flow Sensor can be used.
If you use a Differential Air Pressure Sensor:

- Install it horizontally with the provided fixing flask
- The connections for the pressure reading (see fig. particulars 1 and 2) must be oriented downwards. For the reading connect **P2** (see fig. particular 2); free connector **P1**.



Legend
1 Pressure Connection P1 (high pressure)
2 Pressure Connection P2 (low pressure)
3 Electric Connections

Wiring
red wire: +12V
yellow wire: signal
black wire: GND

Functioning:
The aim of the regulator, acting on the Auger and on the Fan, is to maintain constant the flow for each functioning power in order to optimize combustion. The regulator is active in Run Mode and Modulation mode. For the correct use:

1. Turn ON the system and disable the regulator (**A24**=0). In Run Mode and Modulation, monitor the speed of the flow for all the powers that are being used.
2. Once you have found these values for each power of the system, set:
   - The set values of the airflow for each power (parameters **FL22**÷**FL30**).
   - The airflow variation in relation to the set value for each power (parameters **FL52**÷**FL60**).
   - The time interval for the combustion regulation (parameter **T19**, taking into consideration that the shorter this time is, the fewer readings are made by the system).
   - The waiting time with regulator out of the minimum or maximum range before using another output or signalling the failed regulation (parameter **T20**).
   - Waiting time before starting the first regulation (parameter **T80**)
   - The regulation type to do (parameter **A24**)
   - The width of the regulation step in relation to each output (**U60** and **C60**)
   - The regulation priority on the selected outputs (this function is active only if a configuration of **A24** with two adjustable outputs has been selected). According to the value od**A31** you will have:
     A31=0->the regulator starts to regulate the first output, if requested, it switches to the second one, but it always comes back to the first one
     A31=1->the regulator starts to regulate the first output, if requested it switches to the second one and stays on the last regulated output.
   - The functioning of the system in case of failed regulation of the outputs. According to the value of **A25** you will have:
     A25=0->if regulation fails, the selected outputs will function with the last values calculated by the regulator.
     A25=1->if regulation fails, the regulator will be re-initialized and will attempt a new regulation.
     A25=2->if regulation fails, the regulator will be disabled, the selected outputs will continue to function with default parameters and the message displayed will be **Er17**.
3. Shut off and then turn on the system with activated regulator. The first intervention to stabilize the combustion will occur after a waiting time of**T80**. The system reads the air flow speed for the time**T19** and verifies if it is within the range **FL2X**±(**FL2X***FL5X**). If this does not happen, the regulator modifies the set values for Combustion Fan and Auger. Regulations act on the outputs on the following way:
   - *Detection of minimum air speed of the defined range*
     Combustion fan Speed is increased from the value **U60** until the value**P30**
     The speed/ on time of the Auger decreases from the value **C60** until the value **P27**

- *Air speed detection over the defined range*
  Combustion Fan speed decreases of the value**U60** until the value **P14**
  The speed/ on time of the Auger increases from the value **C60** until the value **P05**

The Regulator functioning can be divided in two modes:

- *Regulation of one output* (**A24=**1 or 3)
  The regulator modifies the set value of one output and if the output stays within the pre-defined values (**P14** and **P30** for the fan, **P27** and**P05** for the Auger) the system will function correctly. On the other hand, if it reaches the minimum or the maximum value for the regulated output without staying within the air speed limits, the system waits a time **T20** and, if **A25**=0 the regulator continues with the current data, if **A25**=1 the regulator resets and starts again, **A25**=2 goes into error, it disables and it is displayed the message **Er17**.
- *Regulations of two outputs* (**A24=**2 o 4)
  The regulator modifies the value of the primary output and if it stays within the pre-defined range, it does not regulate the second output. On the other hand if the air flow is not within the pre-defined range and the primary output values reach to the minimum or maximum value, the system waits a time **T20** and after that it regulates the second output. If also the regulation of the second output reaches its minimum or maximum value without staying within the air speed pre-defined limits, after the time **T20**, if **A25**=0 the regulator continues with current data, if **A25**=1 it resets and starts again from the beginning, if **A25**=2 goes into error, it disables itself and the message **Er17**is displayed.

4. If the regulation is interrupted by random events that force to change the combustion, such as Periodic Cleaning, when the regulation starts again the system will wait for a period equal to **T80** before the first regulation..
5. If on the keyboard appears the message **Er39** the device is damaged or not correctly connected; the regulation is disabled and the outputs Auger and Fan will work with the factory settings.
6. If on the keyboard appears the message **Er42** the maximum air flow has exceeded (**FL40**): and the system goes into Block.
7. If the regulator is enabled to functioning and the time **T01** is not set at 0, if the flow saved at the end of Check Up is less than **FL20** the system goes into Extinguishing and on the display appears the message **Er41**.

NOTE:
If the user changes the Auger and Fan settings with the Calibration, the regulator will consider the new values obtained as starting values for the combustion management.
The value of each power obtained from regulation are stored by the system and used as starting values for the following settings. These values are deleted (and the system will restart from the value of the parameters set by the manufacturer) if the combustion recipe or the value of the parameter **A24**is modified or in case of lack of power.

6.4 HEATING MANAGEMENT

The system is able to manage 2 Heating Fans and provides various heating plants.

6.4.1 HEATING FAN

The Heating Fan works as follows:

- Is ON only if exhaust temperature is more than Thermostat **Th05**
- In Modulation or Standby for Room Thermostat it goes to Power 1
- For safety reason if the temperature is major than **Th07** or **Th08** and the fan goes at maximum speed.

The user can choose between the automatic power [A] or manual power [M]; in case of automatic mode the power is automatically selected according to the value of **P06** parameter. If **P06=**1 the heating power is the same of Combustion Power, If **P06=**2 the heating power is automatically selected from the system according to the Exhaust Temperature, the Thermostat value **Th05** and the parameter **D04**, if **P06**=3 the power is selected automatically by the system in function of room temperature, the value of the used Room Thermostat and the **D05** or **D13** parameter value.

Example: **P06=**2, **Th05**=60°C, **D04**=100 °C, **P03**=5

Exhaust temperature °C	< 60	60 ÷ 84	85 ÷ 109	110 ÷ 134	135 ÷ 159	≥ 160
Heating power	OFF	Power 1	Power 2	Power 3	Power 4	Power 5

6.4.2 CANALIZATION FAN

The Canalization fan is On only if the flue gas temperature is greater than the **Th10** Thermostat.
According to flue gas temperature, the room temperature and the heating plant there are:

Plant	*Flow Direction*	*Remote Room Temperature*	*Exhaust Temperature*	*Output State*
0÷5	-	-	-	OFF
6÷10	Local	-	-	OFF
	Remote	-	>**Th07** or **Th08**	ON: Maximum Power (230 V)
	Remote	>Remote Room Thermostat	<**Th07** and **Th08**	OFF
11	-	-	>**Th07** or **Th08**	ON: Maximum Power (230 V)

	-	> Remote Room Thermostat	<**Th07** and **Th08**	ON: Power 1

The user can choose between the automatic power [A] or manual power [M]; in case of automatic mode the power is automatically selected according to the value of **P07** parameter.
If **P07**=1 the power is the same of combustion power, if **P07**=2, the power is automatically selected by the system in function of the flue gas temperature, the value of the **Th10** thermostat and the **D24** parameter, if **P07**=3 the power is selected automatically by the system in function of room temperature, the value of the used Room Thermostat and the **D05** or **D13** parameter value, if **P07**=4 it is equal to the power of heating.

6.4.3 HEATING PLANT CONFIGURATION

Setting the parameter **P69** it is possible to choose the suitable heating plant. **If a plant selected is not considered in the system it will be set to the 0 configuration**.

Legend:

VR = Heating fan
VC1 = Canalization fan
VC2 = Canalization fan 2
TA = Local room thermostat
TR1 = Remote room thermostat
TR2 = Remote room thermostat 2
SEL = Selector
FC1 = Limit switch
FC2 = Limit switch 2

Heating air flow direction related to limit switch status:

- Plants with 1 limit switch

Limit switch **FC1**	Air flow direction
Open	Local
Close	Remote

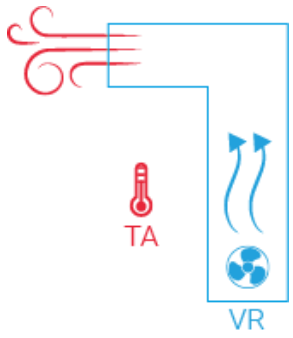
- Plants with 2 limit switch

Limit switch **FC1**	Limits witch **FC2**	Air flow direction
Open	Open	Local-Remote
Open	Close	Local
Close	Open	Remote
Close	Close	Error (**Er25**)

CONFIGURATION 0

Setting **P69**=0 it is chosen the plant shown below:

Room Thermostat: Local TA
Heating Fan: VR

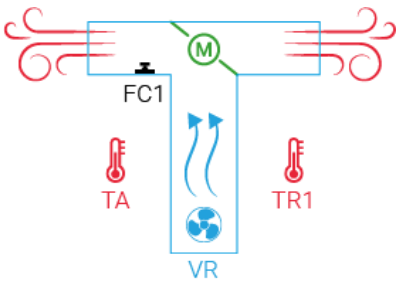


The management of the heating is explained in the section.

CONFIGURATION 3

Setting **P69**=3 it is chosen the plant shown below:

Room Thermostat: Local TA and Remote TR1
Heating Fan: VR
Limit Switch: FC1



In this plant the Selector used to change the heating air flow direction is not managed by the control board; the Selector's position is detected by the limit switch. For Heating Fan management see section.

- If the air flow is directed in local (limit switch open), the aim is give priority to the heating of the room where is the stove. The system management is the same as seen in Configuration 0.
- If the air flow is directed in the remote room (limit switch closed), the aim is give priority to the heating of the room where isn't the stove. The combustion and the Heating Fan are controlled by the Remote Room Thermostat.
  If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.
  In Modulation and Standby for remote room temperature the system management is the same as seen in Configuration 0.

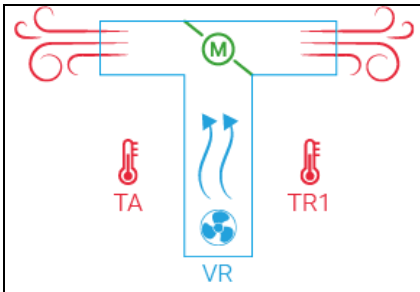
If you want the air flow direction is normally in remote reverse the connections of the limit switch.

CONFIGURATION 4

Setting **P69**=4 it is chosen the plant shown below:

Room Thermostat: Local TA and Remote TR1
Heating Fan: VR

In this plant the Selector used to change the heating air flow direction is not managed by the control board; the Selector's position is detected in the Selector Menu of the Heating Menu.
For Heating Fan management see section



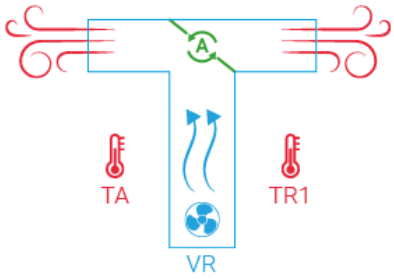
- If the air flow is directed in local, the aim is give priority to the heating of the room where is the stove. The system management is the same as seen in Configuration 0.
- If the air flow is directed in the remote room, the aim is give priority to the heating of the room where isn't the stove. The combustion and the Heating Fan are controlled by the Remote Room Thermostat.
  If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.

In Modulation and Standby for remote room temperature the system management is the same as seen in Configuration 0.

CONFIGURATION 5

Setting **P69**=5 it is chosen the plant shown below:

Room Thermostat: Local TA and Remote TR1
Heating Fan: VR
Selector: SEL



Using the Selector it is possible to change the heating air flow; the Selector's position is detected in the Selector Menu of the Heating Menu.
For Heating Fan management see section 6.4.1.

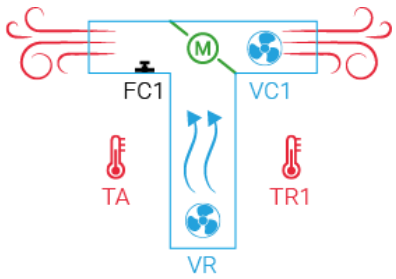
- If the air flow is directed in local, the aim is give priority to the heating of the room where is the stove. The system management is the same as seen in Configuration 0.
- If the air flow is directed in the remote room (limit switch closed), the aim is give priority to the heating of the room where isn't the stove. The combustion and the Heating Fan are controlled by the Remote Room Thermostat.
  If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.

In Modulation and Standby for remote room temperature the system management is the same as seen in Configuration 0.

CONFIGURATION 8

Setting **P69**=8 it is chosen the plant shown below:

Room Thermostat: Local TA and Remote TR1
Heating Fan: VR and VC1
Limit Switch: FC1



In this plant the Selector used to change the heating air flow direction is not managed by the control board; the Selector's position is detected by the limit switch.
For Heating Fan management see section, for the management of the second heating fan see section 6.4.2.

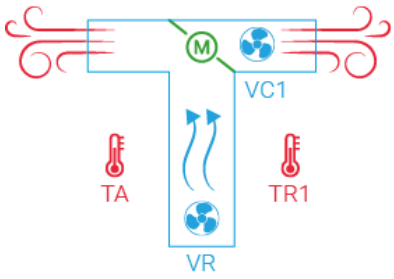
- If the air flow is directed in local (limit switch open), the aim is give priority to the heating of the room where is the stove; so the Remote Room Thermostat is not considered by the system. The Heating Fan management is the same as seen in Configuration 0, the Canalization fan 1 is always Off.
- If the air flow is directed in the remote room (limit switch closed), the aim is give priority to the heating of the room where isn't the stove. The combustion and the heating are controlled by the Remote Room Thermostat.
  If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.
  In Modulation and Standby for remote room temperature the Canalization fan 1 is Off, the Heating Fan management is the same as seen in Configuration 0.

If you want the air flow direction is normally in remote, reverse the connections of the limit switch.

CONFIGURATION 10

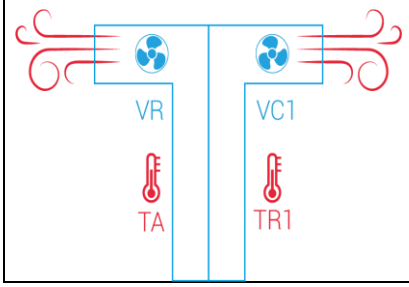
Setting **P69**=10 it is chosen the plant shown below:

Room Thermostat: Local TA and Remote TR1
Heating Fan: VR and VC1



Using the Selector it is possible to change the heating air flow; the Selector's position is detected in the Selector Menu of the Heating Menu.
For Heating Fan management see section, for the management of the second heating fan see section 6.4.2.

- If the air flow is directed in local, the aim is give priority to the heating of the room where is the stove; so the Remote Room Thermostat is not considered by the system. The Heating Fan management is the same as seen in Configuration 0, the Canalization fan 1 is always Off.
- If the air flow is directed in the remote room, the aim is give priority to the heating of the room where isn't the stove. The combustion and the heating are controlled by the Remote Room Thermostat.
  If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.

	In Modulation and Standby for remote room temperature the Canalization fan 1 is Off, the Heating Fan management is the same as seen in Configuration 0.
CONFIGURATION 11 Setting **P69**=11 it is chosen the plant shown below:	
Room Thermostat: Local TA and Remote TR1 *Heating Fan:* VR and VC1 	For Heating Fan management see section for the management of the second heating fan see section 6.4.2. To enable/disable the remote fan VC1 enter in the Canalization fan 1 Menu; the Remote Room Thermostat is taken into account by the system only if its fan is enabled. When the Room Thermostat is satisfied, its fan goes to power 1; in Modulation and Standby for Room Thermostat, the Heating Fan (VR) goes to Power 1. If the parameter **A19**=1 (the local room probe is used), it is possible to define a maximum thermostat (**Th53**) satisfied it the system goes in Modulation; if the system was already in Modulation and **A01**=2 the system goes in Standby.

6.5 CONFIGURABLE INPUT MANAGEMENT

6.5.1 DOOR SENSOR

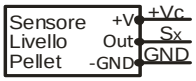
In case of open door, on the panel appears the message *'Port'*, the Auger turns off, and, if the system isn't in Off or Standby state, the Combustion Fan goes at **P22** speed. If the door is open for more than **T92** seconds the system goes in Block with error **Er44**. If the input is set but not used jumper the relative pins.

6.5.2 LEVEL PELLET SENSOR

When the fuel level is under the chosen limit, the system, after reporting the lack of material for a timer equal to T24, goes in extinguishing with Er18. If the tank is refilled with material the system stops to signal it and it's possible to turn on again. When in the system there is an external loading pellet motor, in case of lack of material, it turns on. Thanks to the parameter P09 it is possible to change the reading logic of the sensor.
Different types of sensors can be connected to the control board.

Sensor with continuous voltage output
The control board supports only type PNP sensors and the output voltage value cannot go over 12 Vdc.
The sensors with 5Vdc can be connected to all inputs. The sensors with output major than 5 Vdc (Max 12 Vdc) can be connected to IN6 and IN7.

Connections:



	IN2	*IN3*	*IN6*	*IN7*
+Vc sensor	pin 31	pin 31	pin 31	pin 31
Out sensor	pin 22	pin 24	pin 33	pin 35
-GND sensor	pin 23	pin 25	pin 34	pin 36

Sensors with free contact output
Connections:
Check section for the relative electrical connections.

6.5.3 SELECTOR LIMIT SWITCH SENSOR

The contact is configured as Selector Limit Switch and it is used in some heating plants. The closure of the contact means that the air flow goes to the remote room. Leave unconnected the pins if not used.

6.5.4 CLEANING ENGINE LIMIT SWITCH

The contact is used in synergy with the cleaning engine.

6.5.5 AIR FLOW REGULATOR SENSOR

For the connections check the section.

6.5.6 EXTERNAL CHRONO

The contact is configured as External Chrono: at the closure of the contact the System goes in Ignition; at the opening the System goes in Extinguishing.

6.5.7 REMOTE ROOM THERMOSTAT

For the functioning check the selected heating plant and the system state functioning.

6.5.8 REMOTE ROOM PROBE

For the functioning check the selected heating plant and the system state functioning.

6.5.9 AUGER ENCODER

This input is used if an auger with encoder is chosen.

Chosen:

Sensor	*IN2*
+V	pin 32
Out	pin 22
-GND	pin 23

6.6 CONFIGURABLE OUTPUTS

It is possible to configure the output A1 with the parameter **P52** and the output A2 depending on **P47**.

6.6.1 PELLET SAFETY VALVE

The output is on when the Auger is enabled to work (Check Up, Ignition, Stabilization, Run Mode, Modulation, Safety); the Auger will be on only at the end of timer **T40**.
Preheating phase of the Ignition phase will only start if the timer **T40** expires.

6.6.2 LOAD PELLET ENGINE

When the Pellet Level Sensor signals the absence of pellet, the output is activated to do the loading of the tank. If in a time **T24** is not reached the set pellet level, the system goes in Extinguishing and the display shows the message **Er18**. If the tank is filled manually, it is possible to reset the error and restart the system. If the set pellet level is reached, the loading of the material continues for a time equal to **T23**.

6.6.3 OUTPUT UNDER THERMOSTAT

The output is managed by **Th56** Thermostat. If the exhaust temperature is greater than **Th56** the output is on, otherwise is off.

6.6.4 CLEANING ENGINE

In Off and Block for safety reasons the motor is off. The system doesn't exit from the Check Up phase until the motor is not repositioned.

The Brazier Cleaning Engine is activated:

- During the time **T86** in Extinguishing, Recover Ignition, Standby before the Final Cleaning. Fans and augers are off; the cleaning is repeated **P50** times. To disable the cleaning in these phases, set **P50**=0.
- Periodically, during the time **T141÷T147**, when the operating time in Run Mode, Modulation is greater than **T87** parameter. The combustion parameters don't change; the cleaning is repeated **P49** times. To disable the cleaning, when the system has reached the final power, set **P49**=0.
  If the system goes in Safety state the operating time is **T148**.

The Brazier Cleaning Engine management can be done with or without limit switch:

- management with limit switch (set **P75**, **P77**, **P78** or **P82** to 12)

Phase	*Description*
Phase 1	The system activates the motor and checks the state of the limit switch: when it opens it goes to Phase 2. If, when the **T85** timer expires, the limit switch is still closed the system goes in Block state with error **Er25.**
Phase 2	The maximum duration of this phase is **T86** or **T141÷T147** seconds: during this time the motor must have moved forward or completed its cleaning cycle. At the end, the system moves to Phase 3.
Phase 3	The maximum duration of this phase is **T99** seconds: for this time the motor is turned-off and repositioned in the starting position (the limit switch must be closed again). At the end the system moves to Phase 4. If, at the end of **T99** the limit switch is still open the system goes into Block state with error **Er25.**
Phase 4	If the number of cleaning cycles done is lower than the value set, the system starts a new cleaning cycle otherwise the cleaning function is considered done.

If during the normal operation the control-board reads the limit switch as open, the Brazier Motor is activated to try to close the contact; if it doesn't do it, the system goes in Block state with the error message **Er25.**

- management without limit switch:

Phase	*Description*
Phase 1	The system switches on the engine for a time equal to **T86** or **T141÷T147** seconds, in this time, the engine have to complete its forward movement or the entire Cleaning Cycle. At the end, system goes to Phase 2.
Phase 2	This phase lasts **T99** seconds: During this time the motor is off and must have repositioned itself in the starting position. At the end the system moves to Phase 3.
Phase 3	If the number of cleaning cycles done is lower than the value set, the system starts a new cleaning cycle otherwise the cleaning function is considered done.

6.6.5 Selector

Use this configuration only if **P69**=5, 9 (see section). The output is power supplied only if in the Selector Menu the remote position is set.

6.6.6 Igniter

The output is on according to the functioning of the system check section.

6.6.7 Canalization fan

To check the functioning check the section.

6.7 Auger unblocking function

This feature is available only for Augers with encoder (**P81**=1, 2) and aims to restart the engine if it was stopped for some piece of fuel. If the controller reads the Auger speed to zero for a few seconds when it should operate, it gives three series of pulses at maximum speed to try to unblock the Auger. Each series is made of 4 pulses with 4 seconds of duration, the pause time between one pulse and the other is 5 seconds. At the end of each series the system checks if the auger has been unblocked, if after the third try it is not unblocked, the system goes in Extinguishing with error **Er47**. The impulses last 2 seconds and the pause time between one and another is equal to parameter **P118**.

6.8 System maintenance function 1

When the system exceeds the working hours set by the parameter **T66** it is notify the user to contact the service to verify the proper functioning of the system. The display shows the message *'SEru*, if **P86**=1 the system goes in Block. To unblock, or if **P86**=0 to make the message disappear, it is necessary to reset the counter in the Menu Reset Service. To disable this feature set **T66**=0.

6.9 System maintenance function 2

When the system exceeds the working hours set by the parameter **T67** it is notify the user to clean the boiler or the stove. The display shows the message *'CLr'* and the system gives out an acoustic signal periodically. To stop signalling it is necessary to reset the counter in the Menu Cleaning Reset, this is possible only in OFF state.
To disable this feature set **T67**=0. It is possible to reset even before **T66** expires.

6.10 Extinguishing in ignition phase

When the system is turned off during the Ignition phase (after Preheating phase) by an external device or by internal chrono, it really goes in Extinguishing when it enters the Run Mode at the end of Ignition. On display appears the message " *OFF DEL* ".
If it occurs an error the system goes immediately in Extinguishing; if the **P2** button is pressed it is possible to get immediately the system in Extinguishing or in Ignition.

6.11 Periodic cleaning brazier

When the system is in steady state, or if **A61**=1 in Modulation too, at intervals of time equal to timer **T07** (minutes) and for the length of timer **T08** (seconds), automatically start the periodic cleaning of brazier.
The values of Combustion Fan and Auger change respectively of the percentages **P92** and **P93** respect to set value.
The minimum and maximum values are defined by parameters **P14** and **P30** for the fan and **P27** and **P05** for the auger; if it is set a value equal to -100% the relative output will be off.
NOTE: If **P92** is set to 101 the Combustion Fan will be set at the maximum value.
While the periodic cleaning is in progress the display will show "PCLr".

6.12 Supply voltage lack management

In case of Supply Voltage lack, the system saves the most important functioning data. If the lack is long (about one week), the system goes in Block. Once unlocked, the time value flashes, signalling you have to set time and date by the clock feature.
In case of short lack of voltage supply, with the return of the Supply Voltage, the system evaluates the saved data and, according to parameter **A53** we have:

- **State Recovery mode 0** (**A53**=**0**)
  - If the lack is less than **T88** the system returns to the state in which it was previously
  - If the system was in an On state and the lack of voltage is between **T88** and **T89** the system goes in Recover Ignition, if it is in Pellet modality;
  - In case of lack of Supply Voltage for a time greater than **T89** the system goes in Block with **Er15**error message
- **State Recovery mode 1** (**A53**=**1**)
  - If the lack is less than **T88** the system returns to the state in which it was previously
  - If the system was in a On state and the lack of voltage is greater than **T88** the system goes in Ignition Recovery

6.13 Fast extinguishing function

This function allows the system to go in off state avoiding the extinguishing phase; the error check is guaranteed. To activate it please follow the procedure:

1. Take the system in extinguishing without errors
2. Cut off the power supply
3. Power up and press the On/Off button for 3 seconds

6.14 Auto switch off function

If the parameter **A40** is different from 0 after **T84** minutes in Run Mode and Modulation the system goes in Recover Ignition. If A40=2 the duration of the extinguishing phase of the recover ignition is **T118** seconds and the thermostats are not considered.

7 SYSTEM MENU PARAMETER (TPAR)

7.1 AUGER MENU(TP01)

In the case of Auger with encoder (parameter **P81**=1, 2) values are in RPM, in the case of version without encoder (parameter **P81**=0) they are in seconds. The Auger time On settings can be set in steps of 0.1 seconds, the speed in steps of 10 RPM. The set values and/or calculated are delimited automatically within the limits of **P05** and **P27**.

Code	Description	Min	Max	U	Def.
C01 *	Ignition Power	0	**P05**	[s]	
		0/**P27**		[RPM]	
C02 *	Stabilization Power	0	**P05**	[s]	
		0/**P27**		[RPM]	
C03 *	Power 1	**P27**	**P05**	[s]/[RPM]	
C04 *	Power 2	**P27**	**P05**	[s]/[RPM]	
C05 *	Power 3	**P27**	**P05**	[s]/[RPM]	
C06 *	Power 4	**P27**	**P05**	[s]/[RPM]	
C07 *	Power 5	**P27**	**P05**	[s]/[RPM]	
C08 *	Power 6	**P27**	**P05**	[s]/[RPM]	
C10 *	Second Ignition Power	0	**P05**	[s]	
		0/**P27**		[RPM]	
C11 *	Modulation Power	**P27**	**P05**	[s]/[RPM]	
P05	Auger Period	4	60	[s]	
	Auger's maximum speed	200	3000	[RPM]	
P15	Calibration step of Auger work time	1	20	[%]	
P27	Auger's minimum work time	0	60	[s]	
	Auger's minimum speed	200	3000	[RPM]	
P35	Pulses for Revolution	1	10	[nr]	
P81	Auger management: 0=no Encoder, 1=with Encoder, 2=with Encoder auto If **P81**=2 the system involves the use of encoder. If the regulation is failed or if there isn't the encoder signal, the system goes in Block state with error **Er47**/**Er48**. If **Er47** error occurred, after the alarm reset, the system restart with **P81**=0	0	2	[nr]	
P93	Auger's speed/time on percentage change during Periodic Cleaning	-100	100	[%]	
P118	Time auger off in the unblocking procedure	1	60	[s]	

* related to combustion recipes

7.2 EXHAUST FAN MENU (TP02)

Setting of the combustion fan speed for each power/phase of functioning. In case of fan with Encoder (parameter **P25**=1, 2) the values are in RPM, in case of fan without encoder (parameter **P25**=0) values are in Volt. The set values and/or calculated are delimited automatically within the limits of **P14** and **P30**.

Code	Description	Min	Max	U	Def.
V01 *	Ignition Power	**P14**	**P30**	[V]/[RPM]	
V02 *	Stabilization Power	**P14**	**P30**	[V]/[RPM]	
V03 *	Power 1	**P14**	**P30**	[V]/[RPM]	
V04 *	Power 2	**P14**	**P30**	[V]/[RPM]	
V05 *	Power 3	**P14**	**P30**	[V]/[RPM]	
V06 *	Power 4	**P14**	**P30**	[V]/[RPM]	
V07 *	Power 5	**P14**	**P30**	[V]/[RPM]	
V08 *	Power 6	**P14**	**P30**	[V]/[RPM]	
V09 *	Extinguishing Power	**P14**	**P30**	[V]/[RPM]	
V10 *	Second Ignition Power	**P14**	**P30**	[V]/[RPM]	
V11 *	Modulation Power	**P14**	**P30**	[V]/[RPM]	
V24 *	Speed in Ignition Pre-heating	0/**P14**	**P30**	[V]/[RPM]	
P14	Fan minimum speed	0	230	[V]	
		300	2800	[RPM]	
P16	Calibration step of Combustion Fan	1	20	[%]	
P22	Speed with open door	0/**P14**	**P30**	[V]/[RPM]	
P25	Combustion Fan management: 0=no Encoder, 1=with Encoder, 2=with Encoder auto If **P25**=2 the system involves the use of encoder. If the regulation is failed or if there isn't the encoder signal, the system	0	2	[nr]	

	goes in Block state with error **Er07**/**Er08**. If **Er07** error occurred, after the alarm reset, the system restart with **P25**=0				
P29	Number of pulses per revolution	1	10	[nr]	
P30	Fan maximum speed	0	230	[V]	
		300	2800	[RPM]	
P92	Combustion Fan's speed percentage change during Periodic Cleaning	-100	101	[%]	

* related to combustion recipes

7.3 HEATING FAN MENU (TP03)

Setting of the heating fan speed for each functioning Power

Code	Description	Probe	Min	Max	U	Def.
F01	Power 1		0	230	[V]	
F02	Power 2		0	230	[V]	
F03	Power 3		0	230	[V]	
F04	Power 4		0	230	[V]	
F05	Power 5		0	230	[V]	
F06	Power 6		0	230	[V]	
P06	Heating Power management: 1=the same of combustion power; 2=proportional to the exhaust temperature; 3=proportional to the local room temperature		1	3	[nr]	
P95	Minimum set of heating power		0	1	[nr]	
A04	Heating mode: 0=manual/auto; 1= only auto		0	1	[nr]	
Th05	Switch on Heating Fan	Exhaust	5	900	[°C]	
D04	Delta exhaust temperature for Heating Fan automatic regulation (**P06**=2)	Exhaust	1	120	[°C]	
T69	Delay time for heating fan to go to maximum speed when Exhaust T. > **Th07**		0	900	[s]	
T96	Delay time heating power change (used only if power decreases)		0	900	[s]	

7.4 THERMOSTATS MENU (TP04)

Setting of the system functioning thermostats

Code	Code	Code	Code	Code	Code	Def.
Th01	Stove off	Exhaust	5	900	[°C]	
Th02	Resistance (plug) switch off	Exhaust	5	900	[°C]	
Th03	Pre-Extinguishing thermostat for low flue gas temperature	Exhaust	5	900	[°C]	
Th06	Thermostat to go in Stabilisation from Variable Ignition	Exhaust	5	900	[°C]	
Th07	Exhaust Modulation	Exhaust	5	900	[°C]	
Th08	Exhaust Safety	Exhaust	5	900	[°C]	
Th09	Bypass Ignition	Exhaust	5	900	[°C]	
Th28	Exhaust temperature control in Standby	Exhaust	5	900	[°C]	
Th35**	Extinguishing thermostat for Power 1	Exhaust	5	900	[°C]	
Th36**	Extinguishing thermostat for Power 2	Exhaust	5	900	[°C]	
Th37**	Extinguishing thermostat for Power 3	Exhaust	5	900	[°C]	
Th38**	Extinguishing thermostat for Power 4	Exhaust	5	900	[°C]	
Th39**	Extinguishing thermostat for Power 5	Exhaust	5	900	[°C]	
Th40**	Extinguishing thermostat for Power 6	Exhaust	5	900	[°C]	
Th43**	Extinguishing thermostat for Modulation	Exhaust	5	900	[°C]	
Th53	Safety Thermostat for local room temperature	Exhaust	10	40	[°C]	
Th56	Thermostat to control Aux2 and R Outputs (if **P44**, **P48** or **P52**=3)	Exhaust	5	900	[°C]	
Ih33	Local room thermostat hysteresis	Local Room	0	10	[°C]	
Ih34	Remote room thermostat hysteresis	Exhaust	0	10	[°C]	
D01	Delta temperature increasing exhaust in Stabilization	Local Room	0	100	[°C]	
D05	Local room temperature delta automatic management of Heating and Combustion Fan	Remote Room	3	30	[°C]	
D13	Remote room temperature delta for automatic management of combustion (if a plant with Selector is set) and Canalization fan 1	Exhaust	3	30	[°C]	

D23	Value to add to the Local Room Thermostat to go in Standby from Modulation at the end of **T43** if **A01**=2. To make sure the system goes in Standby at the end of **T43** set **D23**=0.	Local room	0	50	[°C]	
D27	Value to add to the Remote Room Thermostat to go in Standby from Modulation at the end of **T43** if **A01**=2. To make sure the system goes in Standby at the end of **T43** set **D27**=0.	Remote room	0	50	[°C]	
D41	Ignition delta	Exhaust	0	100	[°C]	
** Exhaust Temperature settings for each single Combustion Phase/Power. Below that temperature, after the Pre-extinguishing waiting time **T14**, the stove goes in Extinguishing for lack of flame. These values act in addition to the control of **Th03** thermostat.						

7.5 TIMER MENU (TP05)

Setting of the times of the various functioning phases.

Code	Code	Code	Code	Code	Code
T01	Check Up cleaning	0	900	[s]	
T02	Preheating phase	0	900	[s]	
T03	Auger Preload	0	900	[s]	
T04	Fixed Ignition	0	3600	[s]	
T05	Variable Ignition	0	3600	[s]	
T06	Stabilization	0	900	[s]	
T07	Periodic cleaning cycle	5	600	[min]	
T08	Periodic cleaning duration	0	900	[s]	
T09	High Voltage 1 (Safety Thermostat) delay	1	900	[s]	
T10	High Voltage 2 (Pressure switch) delay	1	900	[s]	
T11	Exit from Standby delay	0	900	[s]	
T13	Minimum period time of extinguishing	0	900	[s]	
T14	Waiting time pre-extinguishing for no flame	0	900	[s]	
T15	Waiting time pre-extinguishing in Safety	0	900	[s]	
T16	Final cleaning time	0	900	[s]	
T17	Delay time combustion power change	0	900	[s]	
T18	Delay time combustion power change in exit from Ignition	0	900	[s]	
T22	Delay time to enter in Standby	0	900	[s]	
T23	Pellet tank charging time over minimum level	0	3600	[s]	
T24	Length signalling of fuel lack if one output is configured as external loading engine or Pellet tank charging time over minimum level if level pellet sensor is installed	0	3600	[s]	
T29	Timer auger off in Preload	0	900	[s]	
T40	Delay to enable Auger if safety pellet valve installed	0	900	[s]	
T43	Delay to go in Standby from Modulation if room temperature is greater than Room Thermostat used added **D23** or **D27** and **A01**=2	0	9600	[s]	
T66	Working time of the system before it goes in Block with the message '*Service*"	0	9999	[ore]	
T67	Working time of the system before appears the message '*Cleaning* '	0	9999	[ore]	
T84*	Work time before the system automatically switches off	1	9600	[min]	
T85	Maximum timer for cleaning engine limit switch opening	1	60	[s]	
T86	Cleaning engine working timer in Extinguishing, Ignition Recover and Standby	0	9600	[s]	
T87*	Cleaning engine pause	1	900	[min]	
T88	Maximum time without voltage supply so that the system goes back to its previous state	10	900	[s]	
T89	Maximum time without voltage supply so that the system goes back to Ignition Recovery	1	1400	[min]	
T92	Door opening time before the system goes in Block	1	900	[s]	
T99	Returning timer/end cycle of cleaning engine	0	9600	[s]	
T118	Duration of the extinguishing phase in recover ignition if the 'Auto switch off' function is enabled **A40**=2	1	900	[s]	
T141	Working time for Power 1	0	9600	[s]	
T142	Working time for Power 2	0	9600	[s]	
T143	Working time for Power 3	0	9600	[s]	

T144	Working time for Power 4	0	9600	[s]	
T145	Working time for Power 5	0	9600	[s]	
T146	Working time for Power 6	0	9600	[s]	
T147	Working time for Modulation	0	9600	[s]	
T148	Working time for Safety	0	9600	[s]	

* related to combustion recipes

7.6 SETTINGS MENU (TP08)

Setting of the system's general functions

Code		Description	Min	Max	U	Def.
A01	0	Room Thermostat used set to do Ignition/Extinguishing	0	2	[nr]	
	1	Room Thermostat used set to do Run Mode/Modulation				
	2	Room Thermostat used set to do Run Mode/Standby. If the Room Thermostat used is achieved, the system before goes in Modulation and then, at the end of **T43**, it goes in Standby if room temperature>(Room Thermostat in use+**D23** or **D27**)				
A10	0	From Extinguishing state it's not possible to go directly to Ignition (first the system goes into Recover Ignition and then goes into Ignition)	0	1	[nr]	
	1	From Extinguishing state it's possible to go directly to Check Up				
A19	0	Local Room Thermostat On/Off selected	0	1	[nr]	
	1	Local Room Probe selected				
A26	0	The immediate exit from Standby is allowed	0	1	[nr]	
	1	Exit from Standby is allowed after the timer **T13** and if the exhausting temperature<**Th28** Thermostat				
A28	0	Auger brake disabled	0	1	[nr]	
	1	Auger brake enabled				
A40	0	Automatic switch off disabled	0	1	[nr]	
	1	Automatic switch off enabled				
A48	0	Enable **P3** or **K5** key of the control panel for Manual Pellet Loading	0	1	[nr]	
	1	Disable **P3** or **K5** key of the control panel for Manual Pellet Loading				
A53	Check section 6.12 for major info		0	2	[nr]	
A61	0	Periodic Cleaning enabled only in Run Mode	0	1	[nr]	
	1	Periodic Cleaning enabled also in Modulation				
A64	0	Fan and Auger Calibration disabled	0	1	[nr]	
	1	Fan and Auger Calibration enabled				
P02	Maximum number ignition attempts		1	5	[nr]	
P03	Work Combustion Powers' number		1	6	[nr]	
P04	Recipe number		1	4	[nr]	
P09	Pellet Sensor configuration: 0=input N.C.; 1=input N.O.; 2=not used		0	2	[nr]	
P47	Output A2 configuration		0	29	[nr]	
P49	Cycles for cleaning engine at run mode		0	100	[nr]	
P50	Cycles for cleaning engine at brazier extinguishing phase		0	100	[nr]	
P50	Output A1 configuration		0	29	[nr]	
P69	Heating configuration (see section 6.4.3)		0	11	[nr]	
P70	Input IN3 configuration		0	28	[nr]	
P71	Input IN2 configuration		0	28	[nr]	
P76	Input IN6 configuration		0	28	[nr]	
P82	Input IN7 configuration		0	28	[nr]	
P86	Service Signalling Management: 0 = the system does not go in Block when **T66** is reached 1 = the system goes in Block when **T66** is reached		0	1	[nr]	

7.7 COUNTERS MENU (TP11)

The LCD and K100 panels menu is composed by two submenus: Counters and Error List. The CP and K400 menu is only composed by Counters Menu

Counters		
Code		**Description**
LCD and K	*CP*	
	Co04	Number of ignition attempts
	Co05	Number of failed ignition attempts
	Co03	Hour of heating effectively produced in Run Mode, Modulation and Safety 
	rES	Reset all counters: turn to zero all counters
	rSUC	Menu to reset the "System Maintenance 1" function
Through the parameter "Setting Counters reset menu vis", inside the System evolution "Enable Functions" Menu, you can enable the **rES** Menu visualization (parameter set to 0) or disable it (parameter set to 1).		
Error List The Menu shows the last 12 errors occurred**;** each line shows the error code, and time and date when the error occurred. The loading time of the list is about of 4 seconds. To delete the list enter the Counters Reset Menu.		

7.8 OUTPUTS' TEST MENU (TP12)

It allows to test the outputs (and the connected loading) with the system in Off state						
Code		**Description**	**Min**	**Max**	**U**	**Def.**
LCD and K	*CP*					
Combustion Fan	**To03**	Combustion Fan test	0	230	[V]	
			300	2800	[RPM]	
Heating Fan	**To02**	Heating Fan test	0	230	[V]	
A2 Output	**To04**	A2 Output Test	Off	On	-	
Auger	**To01**	Auger test	Off	On	-	
			200	3000	[RPM]	
A1 Output	**To22**	A1 Output Test	Off	On	-	
			0	230	[V]	
During the Combustion Fan test, the display shows the set value [V] or [RPM] and the RPM of the fan detected by the encoder (if is present): so it is possible to create a conversion table [RPM]/[Volt] to use for the passage from encoder mode to not encoder mode in case of encoder breakage. During the test of the Auger with encoder, the display shows the set value [RPM] and the number of revolutions [RPM] detected by the encoder. If the Auger is without encoder the test is only performed ON/OFF						

7.9 CANALIZATION FAN MENU (TP14)

Menu to set the values of the Canalization fan 1. Set these parameters only if a heating plant with 2 Heating Fan is chosen (**P69** parameter).						
Code	**Description**	**Probe**	**Min**	**Max**	**U**	**Def.**
Fr01	Power 1		0	230	[V]	
Fr02	Power 2		0	230	[V]	
Fr03	Power 3		0	230	[V]	
Fr04	Power 4		0	230	[V]	
Fr05	Power 5		0	230	[V]	
Fr06	Power 6		0	230	[V]	
P07	Canalization Power management: 1=the same of combustion power; 2= proportional to the exhaust temperature; 3=proportional to the remote room temperature; 4=the same of heating power		1	4	[nr]	
Th10	Switch on Canalization fan	Fumi	5	900	[°C]	
D24	Exhausting temperature delta for automatic management of Canalization fan (**P07**=2)	Fumi	1	120	[°C]	

7.10 Air flow sensor menu (TP16)

Menu to set the values of the combustion air flow regulator.

Enables (FL01)

Code	Description	Min	Max	U	Def.
A24	Sensor management: 0=disabled; 1=Combustion Fan regulation; 2=Combustion Fan+Auger regulation; 3=Auger regulation; 4=Auger+Combustion Fan regulation; 5=not used	0	5	[nr]	
A25	Regulation error management: 0=the system does nothing; 1=the regulator has been reset and restart regulation; 2=regulator disabled	0	2	[nr]	
A31	More output regulation management: 0=the regulator comes back on the last output; 1=the regulator always works on the last output	0	1	[nr]	
T19	Waiting time for stabilization of first output regulation	5	900	[s]	
T20	Waiting time for stabilization of second output regulation	10	900	[s]	
T80	Waiting time for first regulation	0	900	[s]	
U60	Fan regulation step	2	100	[V]	
		10	500	[RPM]	
C60	Auger regulation step	0,1	20	[s]	
		10	500	[RPM]	

Air Flow Set (FL02)

Code	Description	Min	Max	U	Def.
FL20	Minimum air flow in Check Up	0	2000		
FL22	Set air flow for Power 1	0	2000		
FL23	Set air flow for Power 2	0	2000		
FL24	Set air flow for Power 3	0	2000		
FL25	Set air flow for Power 4	0	2000		
FL26	Set air flow for Power 5	0	2000		
FL27	Set air flow for Power 6	0	2000		
FL30	Set air flow for Modulation	0	2000		
FL40	Maximum air flow	0	2000		

Delta Air Flow (FL03)

Code	Description	Min	Max	U	Def.
FL52	Delta air flow for Power 1	0	100	%	
FL53	Delta air flow for Power 2	0	100	%	
FL54	Delta air flow for Power 3	0	100	%	
FL55	Delta air flow for Power 4	0	100	%	
FL56	Delta air flow for Power 5	0	100	%	
FL57	Delta air flow for Power 6	0	100	%	
FL60	Delta air flow for Modulation	0	100	%	

7.11 Restore default parameters (TP26)

This feature allows to restore the parameters set by the manufacturer as the default parameter. To enable this function, use System Evolution Software and set the parameter "*Default parameters Restore*" to 1.