Revision Date	Description
20/05/2019	• Added language set 3
06/02/2019	• Added language set 2
24/01/2019	• Hydraulic Plants 1, 3, 4, 6 have been added • Night Modality

Contents

NG01 is a control system for Pellet Stoves, available in Air and Hydro versions
Stands out for:

- ease of installation and use
- easier and intuitive user functions
- reliable and flexible operating software with consolidated TiEmme elettronica technology
- advanced functions available for the builder to adapt to different stoves and installations

Product Composition:

- electronic board with solid and secure fixing on 4 points
- extractable connectors
- Exhaust flue gas temperature probe
- room probe
- connection cable main board - control panel
- control panel with antistatic cover

Safety Note

Before working on the hydraulic plant please be aware of the following

- the safety and environmental standards.
- All local regulations-including those referring to national and Europe and Standards-must be observed.
- Follow all the safety standards in effect.
- This manual is solely meant for the technical personnel

CE

Conformity Declaration

Applied rules: 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 notice according to the model.

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

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1 Firmware code and languages

Firmware Codes			
Control Board			
NG01	FSYSR02000002		
K series Panels			
K100	FSYSF04000035		
K400	FSYSF13000017		
LCD series Panels	*Set 1*	*Set 2*	*Set 3*
LCD100 Touch	FSYSF03000098	FSYSF03000102	FSYSF03000105
LCD100	FSYSF01000309	FSYSF01000313	FSYSF01000316

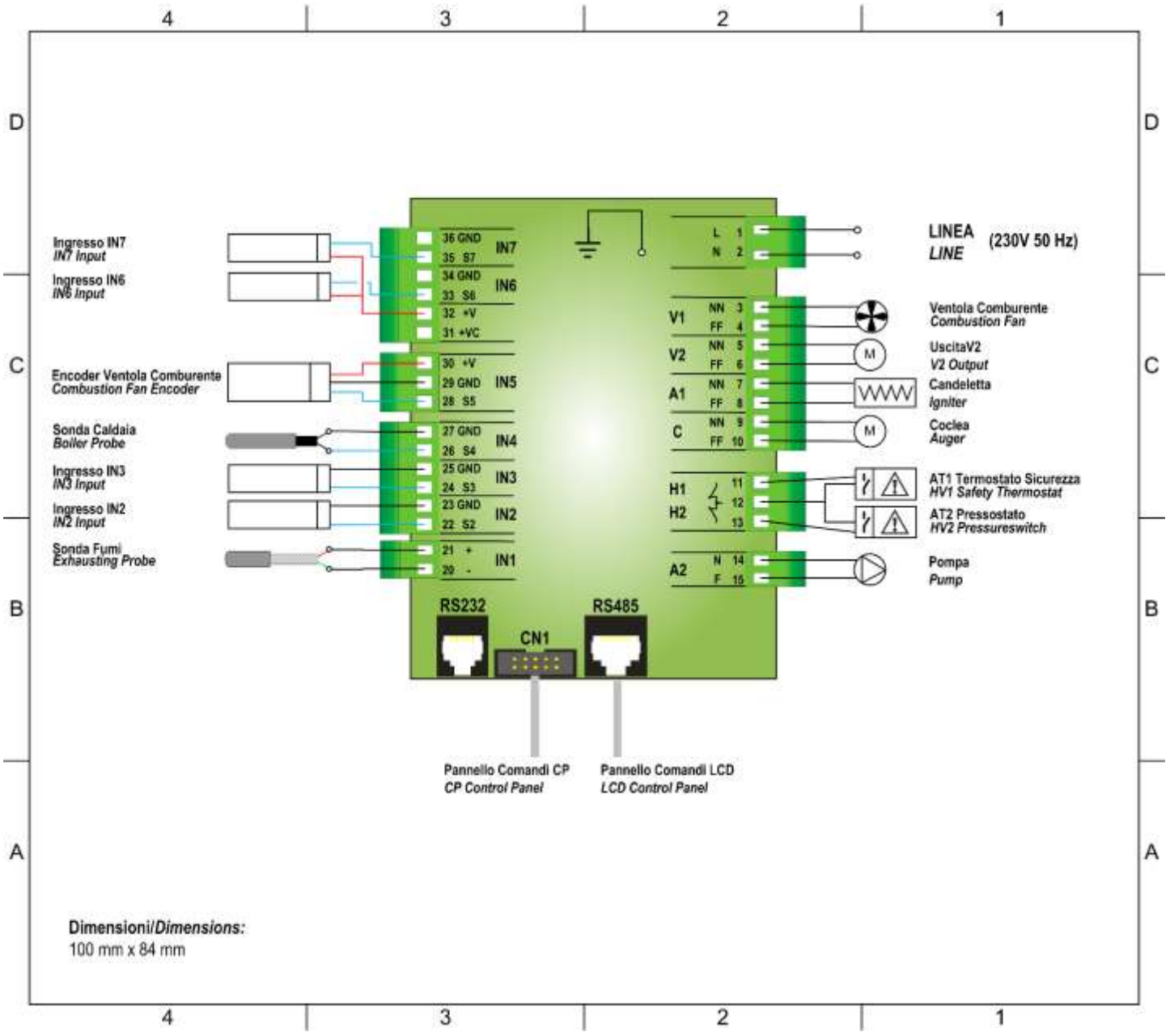
Languages K100and K400keyboards allows you to select the dialogue language from the available choice:			
Italian	Polish	Dutch	Latvian
Portuguese	Serbian	Danish	Estonian
German	Romanian	Swedish	Hungarian
French	Czech	Turkish	Lithuanian
Spanish	Russian	Greek	Slovakian
English	Bulgarian	Croatian	Slovenian

LCD series panels allow you to select the dialogue language from the available choice:

Set 1	*Set 2*	*Set 3*
English	English	English
Portuguese	Dutch	Greek
German	Danish	Latvian
French	Swedish	Estonian
Spanish	Turkish	Lithuanian
Italian	Czech	Hungarian
Polish	Romanian	
Serbian	Slovak	
Croatian	Russian	
Slovenian	Bulgarian	

2 INSTALLATION

2.1 ELECTRICAL CONNECTIONS



2-3 ways Module Connection

On pins 5-6 you can connect the 2-3 ways Module that switches V2 output from triac to relay in exchange; it is a free contacts output.

For the connections, please follow diagram 2 if you have to supply the used charge, otherwise use diagram 1.

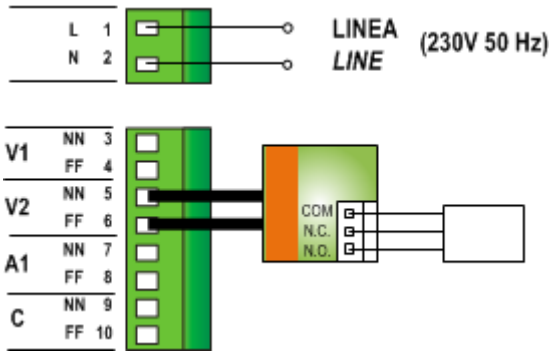


Diagram 1

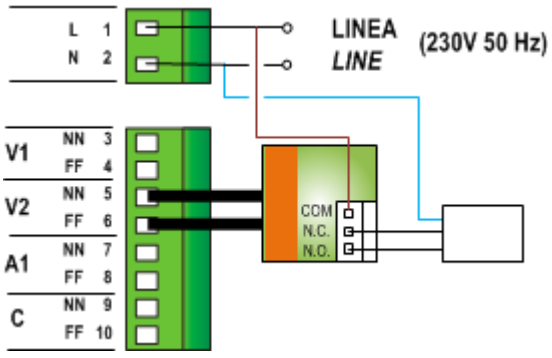


Diagram 2

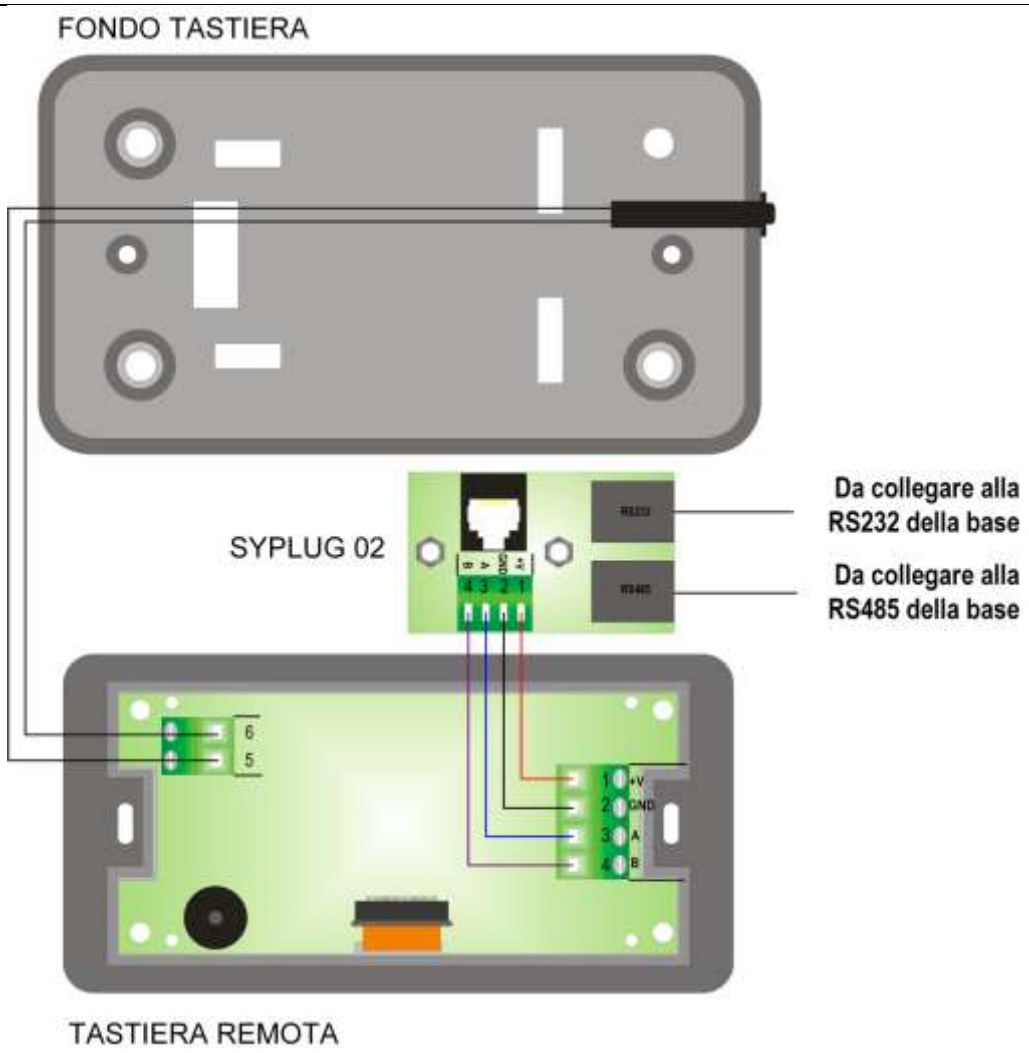
PIN		Function	Technical Specifications
1	L	Voltage Power Supply	230 Vac ± 10% 50/60 Hz
2	N		
3	NN	Combustion Fan	Triac Regulation 0,9 A max
4	FF		
5	NN	V2 Configurable output (Configuration parameter**P44**)	Triac Regulation 0,9 A max
6	FF		
7	NN	Igniter	Triac Regulation1,6 A max
8	FF		
9	NN	Pellet's Auger Engine	Triac Regulation 0,9 A max
10	FF		
11		Safety Thermostat Input AT1	ON/OFF Contact Normally Closed Bypass if not used
12			
12		Safety Pressure switch Input AT2	ON/OFF Contact Normally Closed Bypass if not used
13			
14	N	Pump	Relay 3 A max
15	F		
20	Green —	Exhaust flue gas Probe	Thermocouple K: 500 o 1200 °C Max
21	Red +		
22	SEG	IN2 configurable input (configuration parameter: **P77**)	Analogue/ digital input (NTC 10K probe)
23	GND		
24	SEG	IN3 configurable input (configuration parameter: **P75**)	Analogue/ digital input (NTC 10K probe)
25	GND		
26		Boiler Probe	NTC 10K @25 °C: 120 °C Max
27			
28	SEG	Combustion Fan Encoder Sensor	Signal TTL 0 / 5 V
29	GND		
30	+V		
31	+Vc	+10÷14 Volts	-
32	+V	+5 Volts	-
33	SEG	IN6 configurable input (configuration parameter: **P78**)	Analogue / digital Input
34	GND		
35	SEG	IN7 configurable input (configuration parameter: **P82**)	Analogue / digital Input
36	GND		
RS232		RS232 connector	Connection to Programmer, KeyPro, Modem, PC
RS485		RS485 connector	Connection to LCD keyboard, 4Heat
CN1		Flat Cable	Connection to CP keyboard

2.2 Connection to LCD and K series panels

LCD and K series panels use the protocol RS485 for the connection with the control board; the standard allows distance connections, with high noise immunity, provided that the protocol directives are complied with.
We recommend the use of twisted and shielded wires for connection.

Remote Keyboard
The Remote Keyboard allows remote control of the system. It has similar functions as the Local Keyboard; a sensor is installed on board, detecting the room temperature and the temperature displayed is the one detected by this sensor.

Connections
Follows the wiring diagram for the connection of the Remote Keyboard to the SYPlug02 board, which takes the connectors RS232 and RS485 of the control board out of the stove/boiler

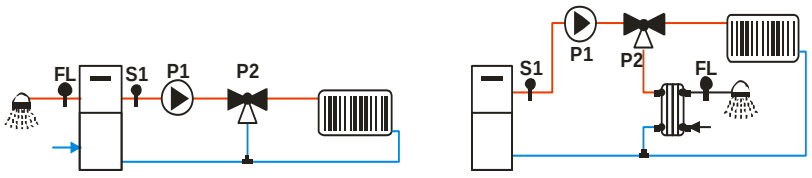


2.3 First Configuration

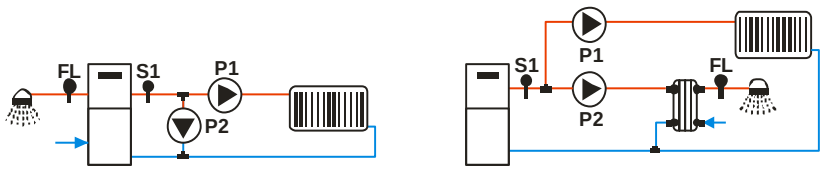
The first step is to select the hydraulic plant via parameter **P26** in the Settings Menu inside the System Menu and then proceed to the parametrization of the configurable output V2 (parameter **P44**) and of the configurable inputs. Finally set **P25** to select the combustion fan (with or without encoder) and **P81** to select the Auger (with or without encoder)

Selectable plants (for more information see the paragraph 6.3):

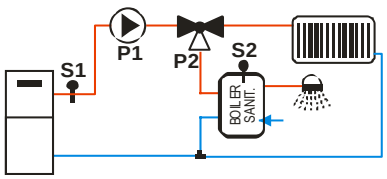
Configuration 0 (**P26**=0)



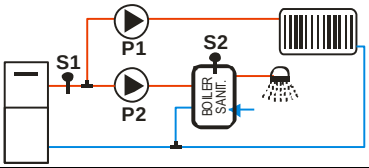
Configuration 1 (**P26**=1)



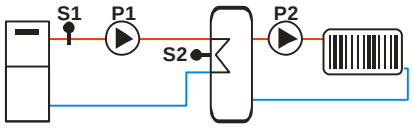
Configuration 2 (**P26**=2)



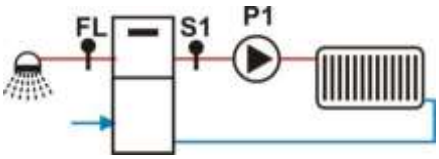
Configuration 3 (**P26**=3)



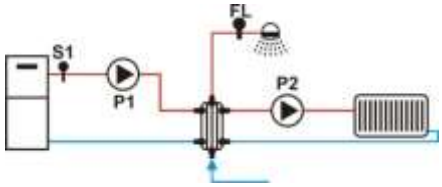
Configuration 4 (**P26**=4)



Configuration 5 (**P26**=5)



Configuration 6 (**P26**=6)



Configurable Outputs (or more information see the paragraph 6.5):

Connected Devices	*Parameter Value*	*Output V2 (**P44**)*
Disabled output	0	√
Pellet Safety Valve	1	√
Load Engine	2	√
Output under thermostat	3	√
Combustion Fan 2	5	√
Heating Fan	6	√
Air Valve	7	√
Error message	11	√
Electrovalve/Pump P2	15	√
Auger 2	17	√
Cleaning Engine	25	√

Configurable Inputs (for more information see the paragraph 6.4):

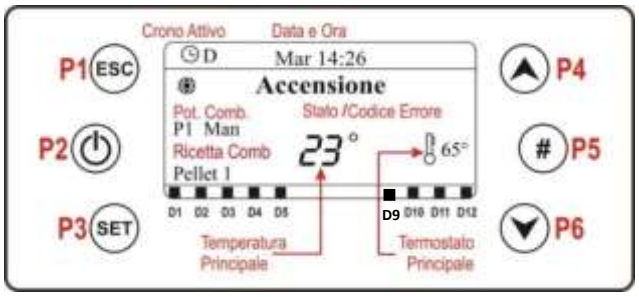
Connected Devices	*Parameter Value*	*Input*			
		*IN2 (**P77**)*	*IN3 (**P75**)*	*IN6 (**P78**)*	*IN7 (**P82**)*
Non-used input	0	√	√	√	√
Door Sensor	2	√	√	√	√
Pellet Thermostat	3	√	√	√	√
Room Thermostat	4	√	√	√	√
Flow switch	5	√	√	√	√
Pellet Level Sensor	6	√	√	√	√
DHW/Buffer tank Probe	9	√	√	—	—
Cleaning Engine Limit Switch	12	√	√	√	√
Room Probe	15	√	√	—	—
Primary Air Flow Regulator	16	—	—	√	√
Exterior Chrono	17	√	√	√	√
Auger Encoder Input	28	√	—	—	—
Water Pressure Sensor	29	—	—	√	√

3 Control panel

3.1 LCD series panels

3.1.1 LCD100

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

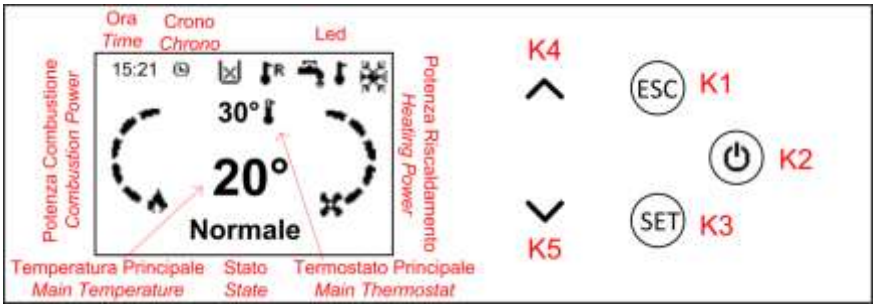


Key	Function		
P1	Exit from Menu/Submenu		
P2	Ignition/Extinguishing (push for 3 sec.), Errors Reset(push for 3 sec.), Enabling/Disabling Chrono		
P3	Enter in User Menu 1/submenu, Enter in User Menu 2 (push for 3 sec.), Save data		
P4	Enter in Visualization Menu, Increase		
P5	Enabling Chrono time slot		
hP6	Enter in Visualization Menu , Decrease		
Led	**Function**	**Led**	**Function**
D1	Igniter ON	**D9**	Exterior Chrono reached
D2	Auger Engine ON	**D10**	Lack of fuel in the tank
D3	Pump ON	**D11**	Room Thermostat/Room Thermostat remote keyboard reached
D4	Output V2 ON	**D12**	Sanitary water demand

3.2 K series Panels

3.2.1 K100

the main display shows:
time and date, chrono activation, combustion power, heating power, operating mode, main temperature, main thermostat



Key	Function		
P1	Exit from Menu/Submenu		
P2	Ignition/Extinguishing (push for 3 sec.), Errors Reset(push for 3 sec.), Enabling/Disabling Chrono		
P3	Enter in User Menu 1/submenu, Enter in User Menu 2 (push for 3 sec.), Save data		
P4	Enter in Visualization Menu, Increase		
P5	Enter in Visualization Menu , Decrease		
Led	**Function**	**Led**	**Function**
	Room Thermostat/Room Thermostat remote keyboard reached	1	Exterior Chrono reached
	Winter		Summer
	Sanitary water demand		

3.2.1 K400

Home Page 1

Date and time, temperature of the local room in use, Local room thermostat in use, signalling error tool

HOMEPAGE 1/2

Selection keys

	Ignition and unblock of the system with one click		Access to Information Menu
	Access to User Menu 1		Access to Chrono Function
	Access to User Menu 2		Access to error list (64 recordable errors)

Main Leds

The arrow in the top side of the display allows you to have access to quick toolbar of the special leds. Here you can find:

	combustion power set		Chrono functionality state		Winter
	Summer				

Home Page 2

System Functioning Led

HOMEPAGE 2/2

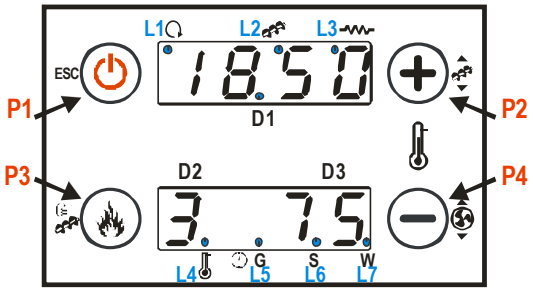
System Functioning Led

	Auger On		Output V2 On		Room Thermostat/ Remote keyboard Room Thermostat reached
	Igniter On		Exterior Chrono reached		Sanitary hot water demand
	Pump On		Lack of fuel in the tank		

3.3 CP SERIES PANELS

3.3.1 CP110

Variables displayed on the main screen:
*Display **D1***: time, operating mode, errors, menu, submenu, variables' values
*Display **D2***: power, value code
*Display **D3***: recipe
*Display **D4***: main temperature, value code

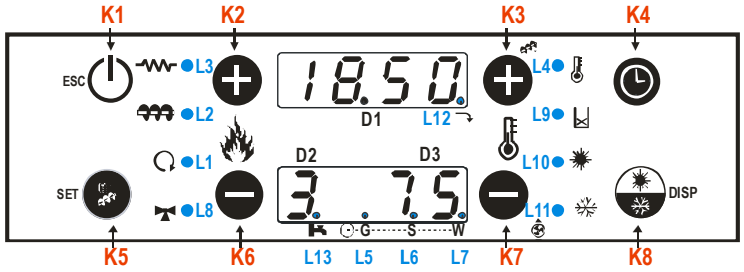


Key	Function	
	Click	**Long Press**
P1	Views / Exit from Menu	Ignition / Extinguishing / Block Reset
P2	Thermostat Adjustment(+) / Increase data	Pellet load correction
P3	Combustion power change / Save data	Pellet manual load
P4	Thermostat adjustment (-) / Decrease data	Exhaust flue gas Fan Correction

Led		Function	Led			Function
L1		Led On: Pump On	L5		G	Led On: Daily program
L2		Led On: Auger ON period	L6		S	Led On: Weekly program
L3		Led On: Igniter On	L7		W	Led On: Week End program
L4		Led On: Room Thermostat /remote keyboard Room Thermostat temperature reached				

3.3.2 CP120

Variables displayed on the main screen:
*Display **D1***: time, operating mode, errors, menu, submenu, variables' values
*Display **D2***: power, value code
*Display **D3***: recipe
*Display **D4***: main temperature, value code



Keys	Function	
	Click	**Long Press**
K1	Exit from menu	Ignition / Extinguishing / Block Reset
K2	Combustion power change (+)	-
K3	Thermostat Adjustment(+) / Increase data	Pellet load correction
K4	-	Enabling Chrono time slot
K5	Enter in User Menu 2 / Save data	Pellet manual load
K6	Combustion power change (-)	-
K7	Thermostat adjustment (-) / Decrease data	Exhaust flue gas Fan Correction
K8	Visualization	Summer/Winter modality selection

Led			Function	Led		Function
L1			Led On: Pump On	L8		Led On: Valve On
L2			Led On: Auger ON period	L9		Led On: Lack of fuel in the tank
L3			Led On: Igniter On	L10		Led On: Summer modality selected
L4			Led On: Room Thermostat/remote keyboard Room Thermostat temperature reached	L11		Led On: Winter modality selected
L5		G	Led On: Daily program	L12		Led On: Load Pellet Engine On
L6		S	Led On: Weekly program	L13		Led On: sanitary water demand
L7		W	Led On: Week End program			

3.3.3 Visualization of the functioning modes

Status	Code	Status	Code	Status	Code
Off mode	-	Ignition-Variable Phase	On 4	Safety	SAF
Check Up	ChEc	Stabilization	On 5	Extinguishing	OFF
Ignition-Preheating Phase	On 1	Run Mode	-	Block	Alt
Ignition-Preload Phase	On 2	Modulation	Mod	Recover Ignition	rEc
Ignition-Fixed Phase	On 3	Standby	Stby		

3.4 Alarms

The system goes in Block with any alarm

Description	Code	
	LCD and K	*CP*
Safety Thermostat Intervention HV1: signalling even when the stove is off	Er01	Er01
Intervention of the safety Pressure Switch HV2: signalling with Combustion Fan On	Er02	Er02
Extinguishing for exhaust flue gas temperature decrease	Er03	Er03
Extinguishing for water Overtemperature	Er04	Er04
Extinguishing for exhaust flue gas overtemperature	Er05	Er05
Pellet Thermostat open (flame return from the brazier)	Er06	Er06
Combustion Fan Encoder : no Encoder signal (if **P25=1** or **2**)	Er07	Er07
Combustion Fan Encoder: fan speed regulation failed(if **P25=1** or **2**)	Er08	Er08
Low Water Pressure (if the system is Off or in Block state and the P1Pump is off, the error is not reported	Er09	Er09
High Water Pressure	Er10	Er10
Incorrect Time/Date values after long absence of the power mains	Er11	Er11
Ignition failed	Er12	Er12
Power mains interruption	Er15	Er15
Communication Error RS485	Er16	Er16
Air Flow Regulation Failed	Er17	Er17
Lack of fuel	Er18	Er18
Boiler or DHW/Buffer tank probe open	Er23	Er23
Cleaning Engine broken	Er25	Er25
Flowmeter Sensor broken	Er39	Er39
Minimum air flow in Check Up not reached	Er41	Er41
Maximum Air Flow overreached (**FL40**)	Er42	Er42
Door Error	Er44	Er44
Auger Encoder: lack of Encoder signal (if **P81=1** or **2**)	Er47	Er47
Auger Encoder : speed regulation failed (if **P81=1** or **2**)	Er48	Er48
Service Error. It notifies that the planned hours of functioning in Maintenance 1 function 'have been reached' (parameter **T66**). Call the Authorised Technical Service Centre.	Service Er40	SErU

3.5 Messages

Description	Code	
	LCD and K	*CP*
Fault on probes control in Check Up phase Up	PRob	PRob
Water Temperature in the boiler higher than99 °C		Hi
It notifies that the planned hours of functioning have been reached (parameter **T67**).	Clean	CLr
The door is open	Door	Door
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.	Ignition Block	OFF dEL
LCD panel and the control board cannot communicate	Link Error	-
Periodic Cleaning in progress	Cleaning On	PCLr
System in Night Mode	Night Mode	NiGH
The message is displayed when there is sanitary water demand (flow switch contact closed). It is displayed only in case of hydraulic plant including Flow Switch.	-	FLu

3.6 Visualization

Display		Unit	Description
LCD and K	*CP*		
T. Exhaust flue gas	tF	[°C]	Exhaust flue gas temperature
Boiler T	-	[°C]	Boiler Temperature

T. Room	**tA**	[°C]	Room Temperature ; it is displayed only if an input has been set as a Room Probe
T. DHW	**tP**	[°C]	DHW Temperature; it is displayed if an input has been set as DHW /Buffer Probe and a hydraulic plant with sanitary buffer tank has been selected.
T. Buffer	**tP**	[°C]	Buffer Temperature; it is displayed if an input has been set as DHW/Buffer Probe and a hydraulic plant with buffer tank has been selected..
Air Flow	**FL**	-	Air Flow; it is displayed if an input has been set as Primary Air Sensor
Fan	**UF**	[rpm]	Speed of the Exhaust flue gas Fan; it is displayed only if **P25** is different from 0
Auger	**Co**	[s]	ON time of the Auger; it is displayed if **P81** is the same as 0
Recipe	**-**	[nr]	Combustion Recipe Selected; it is displayed if **P04** is greater than 1
Water Pressure	**PA**	[mbar]	Water Pressure; is displayed if an input has been set as Water Pressure Sensor
Service	**St**	[h]	Functioning time left before the system displays the message '*Service*'; it is displayed if **T66** is greater than 0.
Clean	**St2**	[h]	Functioning time left before the cleaning of the stove; it is displayed if **T67** is greater than 0.
Working hours	**-**	[h]	Working hours of the stove in Run Mode, Modulation and Safety mode
Ignition	**-**	[nr]	Number of attempted ignitions
-	**nGHt**	-	State of the Night Mode function
-	**FUnC**	-	Summer(*ESt*)/Winter (*InU*) Modality functioning
-	**FC**	-	Firmware Code and Revision: FYSr02000002.x.y
Prod. Code 562-xyzt			Product code

4 Menu

4.1 LCD and K series panels menu

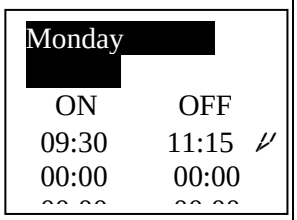
4.1.1 User menu 1

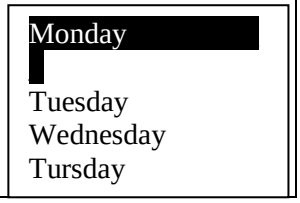
<table>
<tr><td>Power</td><td>Combustion
This menu allows you to modify the combustion power of the system. It can be set in modality automatic or manual: in the first case, the system will choose the combustion power; in the second case, the user selects the power.</td></tr>
<tr><td></td><td>Heating
In this menu is possible to modify the heating power of the system. It can be set in modality automatic or manual: in the first case, the system will choose the combustion power; in the second case, the user selects the power.
If no output is set as Heating Fan or if you set the parameter A04=1 the menu is not displayed.</td></tr>
<tr><td>Thermostats</td><td>Boiler
This Menu allows you to modify the Boiler Thermostat value. Minimum and maximum value can be programmed by setting the ThermostatsTh26 and Th27.</td></tr>
<tr><td></td><td>Room
This Menu allows you to modify the Room Thermostat value. It is displayed only if an input as been set as Room Probe.</td></tr>
<tr><td></td><td>DHW
This Menu allows you to modify the DHW Thermostat value. It is displayed if an input has been set as DHW/Buffer Probe and a hydraulic plant with sanitary buffer tank has been selected..</td></tr>
<tr><td></td><td>Buffer
Menu to change the value of the Buffer Thermostat. It is displayed if an input has been set as DHW/Buffer Probe and a hydraulic plant with buffer tank has been selected..</td></tr>
<tr><td>Recipe</td><td>This menu allows you to select the Combustion Recipe; if you set up the parameter P04=1 the menu is not displayed.</td></tr>
<tr><td>Chrono</td><td>It allows programming and enabling ignitions/extinguishing of the system. It consists of 2 submenu.
Mode
It allows you to select the mode of your choice or to disable all the set programmes.
• enter modify mode with the keyP3
• select the mode of your choice (Daily, Weekly or Weekend)
• enable/disable chrono mode with the button P2
• save the new settings with the key P3

Program
The system has 3 programmes: Daily, Weekly, Weekend. After selecting the program of your choice:
• select the time with the buttons P6 or P4 (P5 or P4 for the K100)
• enter the modify mode (the selected time flashes) with the button P3
• modify the time with the buttons P6 or P4 (P5 or P4 for the K100)
• save the new settings with the button P3
• enable (a “V” is displayed) o disable the time slot (a “V” is not displayed) pushing the button P5 (P2 for K100)

Daily
Select the day of the week of your choice and set the ignition and extinguishing times.
Program across midnight
Set an ON time of the day before of your choice: Ex. 20.30
Set the OFF time of the day before at 23:59
Set the ON time for the next day at 00:00
Set the OFF time of the next day of your choice:: Ex. 6:30

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

	The system will turn on at 20.30 on Tuesday and will turn off at 6.30 on Wednesday *Weekly* The programs are the same for all the days of the week. *Weekend* Choose between the time slots Monday-Friday and Saturday-Sunday and set the time for ignition and extinguishing..	Mon-Fri Sat-Sun
Load	The procedure activates the pellet manual loading. The loading is stopped automatically after 300 seconds. In order to enable this function the system must be on mode Off . Only for local control panel.	
Remote Keyboard (only for remote control panel; it is displayed if **A52**>0)	**Enabling Thermostat** It allows you to enable/disable the Room Thermostat functioning.	
	Room Thermostat This Menu allows you to modify the value of the remote keyboard's Room Thermostat.	

4.1.2 User Menu 2

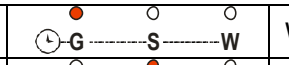
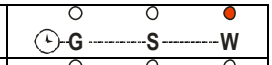
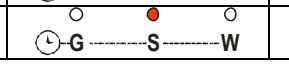
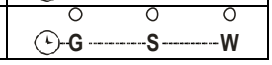
Settings	**Time and Date** It allows you to set day, month, year and current time
	Language It allows you to modify the language of the keyboard
	Radio control *OFF* : no radio control *ON* : the radio control SYTX4 is used..
	Clean Reset Menu to reset the function 'Maintenance 2 System'. It is displayed only if **T67**>0.
	Auger Calibration This menu allows you to modify the factory set values of speed or the On times of the auger. You can set the values in a range between –7÷7. The factory value is 0. The menu is displayed only if **A64**=1. Only for local control panel.
	Fan Calibration This menu allows you to modify the factory set values of the Combustion Fan speed. You can set the values in a range between –7÷7. The factory value is 0. The menu is displayed only if **A64**=1. Only for local control panel.
	Summer-Winter This Menu allows you to modify the hydraulic plant functioning depending on the season.
	Night Modality Menu to set and enable the beginning and ending time slots of the Night Mode. The time slots programming is the same as in Chrono Menu. To program it across midnight, set a time slot until 23.59 and the following from 00.00 to the time of your choiceº. Night Mode allows you to disable in the set time slots the functioning of the following Engines: Load Engine (if **P100**=1), Cleaning Engine (if **P103**=1). During the set times, the display shows the message *Night Mode*. The menu is displayed only if at least one engine is disabled in Night M ode.
Display Menu	**Brightness *** It allows you to adjust the screen brightness
	Contrast ** It allows you to adjust the screen contrast
	Minimum Brightness It allows you to adjust the screen brightness when not used
	Keyboard address This Menu is protected by a password (*the password is 1810*), that allows you to set the RS485 node address. With the bus 485 it is not possible to have more nodes with the same address.
	Sound * It allows you to enable or disable sound from the control panel
	Node List This Menu allows you to see the communication address of the control board, type of control board and firmware version. The control board types can be: *MSTR* Master *INP* Inputs *KEYB* Keyboard *OUT* Outputs *CMPS* Composite *SENS* Sensors *COM* Communication
	Acoustic Alarm **

	Menu that allows you to enable/disable the acoustic alarm
	Wallpaper * It allows you to change the control panel wallpapers
System Menu	Menu for the access to reserved data for the technical staff. To enter you need a password (*default password: 0000*).

0* Only for per K400 control panel **** only for LCD series panel

4.2 CP SERIES PANELS MENU

4.2.1 USER MENU 1

Combustion Power	Click the key **P3** or **K2/K6**: the display **D2** flashes. Through subsequent clicks, it is possible to change the power according to the available values. Ex.: 1–2–3–4–5–6-A (A=automatic combustion). After 5 seconds the new value is saved and the normal display appears.
Manual Load	Long pressing the key **P3** or **K5** Pellet manual Load switches on, with the continuous auger activation. The lower display shows *LoAd*, the upper one shows the elapsed load time. To stop the load press any key. The loading is stopped automatically after 300 seconds. Enabled only if **A48**=0.
Auger Calibration	By long pressing the key**P2** or **K3** you can enter the Auger Calibration menu (you have to repeat it twice to enter modify mode). The lower display shows *Pell*, the higher one shows the set value. With the keys **P2/P4** or **K3/K7** you can increase/decrease the value; the factory value is 0. The value is saved after 5 seconds and the normal display appears. Enabled only if**A64**=1.
Fan Calibration	By long pressing the key **P4** or **K7** you can enter the Fan Calibration menu (you have to repeat it twice to enter modify mode). The lower display shows *UEnt*, the upper one shows the set value. With the keys **P2/P4** or **K3/K7** you can increase/decrease the set value; the factory value is 0.. The value is saved after 5 seconds and the normal display appears. Enabled only if**A64**=1.
Boiler Thermostat	The Thermostat value is shown on the lower display. Minimum and maximum value can be programmed by setting the thermostats **Th26** and**Th27**
Enabling Chrono (only CP120 keyboard)	By long pressing the key **K4** you can enable and select the operating mode of the internal Chronothermostat. Daily Program  Week-End Program  Weekly Program  Chrono disabled 
Summer-Winter modality (inly for CP120)	By long pressing the key **K8** you can modify the operating mode of the system

4.2.1 USER MENU2

Enter the Menu by pressing simultaneously the keys **P3** and **P4** for 3 seconds for CP110 keyboard, or by single click on the key**K5** for CP120 keyboard

Heating Power(**Air**)

It allows you to modify the power of the Heating Fan.
If no output is set as Heating Fan or if you set the parameter **A04**=1 the menu is not displayed.

Heating	*Description*
1–User Power number	Power adjusted in Manual from 1 to User Power number
Auto	Power adjusted in automatic depending on the value of the parameter**P06**

Thermostats (**tErM**)

Menu that allows changing the value of DHW Thermostat, Buffer Thermostat (**Th58**) and Room Thermostat (**Th33**).

Display	*Radio*	*Description*
dHU	DHW	This Menu allows you to modify the value of DHW Thermostat; it is displayed if an input has been set as DHW/Buffer Probe and a hydraulic plant with sanitary buffer tank has been selected.. Minimum and maximum value can be programmed by setting the corresponding thermostats **Th51** e **Th52**.

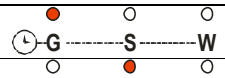
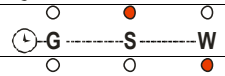
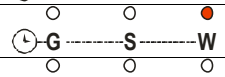
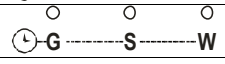
	PuFF	Buffer	This Menu allows you to modify the value of Buffer Thermostat; it is displayed if an input has been set as DHW/Buffer Probe and a hydraulic plant with buffer tank has been selected.. Minimum and maximum value can be programmed by setting the corresponding thermostats **Th51** and **Th52**.
	AMb	Room	This Menu allows you to modify the value of the Room Thermostat; it is displayed only if a room probe is selected.

Chrono (**Cron**)

This Menu allows you to program the Ignition/Extinguishing time slots.
It consists of two submenu:

Enabling Chrono Menu

This menu allows you enable and select the operating mode of the Chronothermostat. The display shows the message **ModE** (only for CP110 keyboard).

Mode	*Led*
Gior: Daily Program	
SEtt: Weekly Program	
FiSE: Week-End Program	
OFF: Disable all programs	

Menu for the Time Slots Programming

The display shows the message **ProG** It consists of 3 submenu corresponding to the 3 available programming modalities:

Daily: It allows you to set 3 programs for each day of the week.
Weekly: It allows you to set 3 programs a day, the same for every day of the week.
Week-end: It allows you to set 3 programs a day distinguishing between the monday-friday program and saturday-sunday program.

Visualization	*Display*
Daily mode: the first day of the week	**M o**
Weekly mode: Monday-Sunday	**M S**
Week-end mode: Monday-Friday Saturday-Sunday	**M F** **S S**
For the On time, a dash on the lower part of the display **D2 lights up**	**- - - -** **1 I M o**
For the Off time a dash on the higher part of the display **D2 lights up**	**- - - -** **1 I M o**

Instructions

For each program, you must set the ON and OFF time.

Description	*Display*
1) Scroll with the keys**P2**/**P4** or **K3**/**K7** until the submenu of your choice and then set the key**P3** or **K5**	**G i o r n**
2) Press the keys**P2**/**P4** or **K3**/**K7** to select one of the three available program	**- - - -** **1 I M o**
3) Press the key**P1** or **K4** for 3 seconds	**0 0 . 0 0** **1 I M o**
4) Select the ignition time	
5) Press the key**P3** or **K5** to enter modify mode: the selected value (hours or minutes) flashes. Press the keys**P3** or **K5** to switch from hours to minutes and vice versa, **P2**/**P4** or **K3**/**K7** to modify the value.	**0 1 . 0 0** **1 I M o**
6) Press the key **P3** or **K5** to save the set value	**2 1 . 3 0** **1 I M o**
7) Select with the key **P2** or **K3** the OFF time and repeat the process from step 5	**0 0 . 0 0** **1 I M o**

For each programming time slot, it is possible to modify the minutes' value with fifteen minutes steps (example: 20.00, 20.15, 20.45).
Only when you set the hour value to 23 it will be possible to increase minutes from 45 to 59 in order to obtain an ignition across midnight.

Program across midnight:

For a programming time slot of a day of the week set the OFF time at 23:59. For a programming time slot of the following set the ON time at 00:00.

Example

<table>
<tr><td></td><td>
<table>
<tr><td colspan="4">Monday Chrono Programming</td></tr>
<tr><td>ON</td><td>22.00
1 I Mo</td><td>23.59
1 I Mo</td><td>OFF</td></tr>
<tr><td colspan="4">Tuesday Chrono Programming</td></tr>
<tr><td>ON</td><td>00.00
1 I Tu</td><td>07.00
1 I Tu</td><td>OFF</td></tr>
</table>
</td></tr>
<tr><td>Combustion Recipe (ricE)</td><td>This menu allows you to modify the current combustion recipe; maximum value is the number of recipes the user can view (parameter P04). If P04=1 the menu is not displayed.</td></tr>
<tr><td>Clock (oroL)</td><td>It allows you to set current date and time. The upper display shows hours and minutes, the lower one the day of the week.
<table>
<tr><td>Instructions</td><td>Display</td></tr>
<tr><td>Press the keyP3 or K5 to enter modify mode. The selected value (hours, minutes, day) flashes. Modify the value with the keys P2/P4 or K3/K7. Press the keyP3 or K5 to switch to modify other parameters. Press againP3 or K5 to save the set value.</td><td>07.33
Mo</td></tr>
</table>
</td></tr>
<tr><td>Summer-Winter (FUnC)</td><td>It allows the selection Summer-Winter. It is present only in CP110 keyboards.</td></tr>
<tr><td>Radio control (TELE)</td><td>This menu allows you to enable and disable the functioning of the radio control SYTX.</td></tr>
<tr><td>Night Mode (nGHt)</td><td>Menu to set and enable the beginning and ending time slots of the Night Mode.
The time slots programming is the same as in Chrono Menu. To program it across midnight, set a time slot until 23.59 and the following from 00.00 to the time of your choiceº.
Night Mode allows you to disable in the set time slots the functioning of the following Engines: Load Engine (if P100=1), Cleaning Engine (if P103=1).
The menu is displayed only if at least one engine is disabled in Night M ode.</td></tr>
<tr><td>Cleaning Reset (rCLr)</td><td>This menu allows you to reset the function ‘Maintenance 2 System’. It is displayed if T67 is more than 0.</td></tr>
<tr><td>System Menu (TPAr)</td><td>Menu for the access to reserved data for the technical staff. Access is protected by a password (default password: 0000).</td></tr>
</table>

5 Operating modes

5.1 Block

Controls	*Combustion Fan*	*Auger*	*Igniter*
To exit the block mode press for 3 seconds the key **P1** or **K1**: if there are not Block conditions any more the system goas in mode **Off**.	**OFF**	**OFF**	**OFF**

5.2 Off mode

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
	If Exhaust flue gas Temperature> **Th01**	→ goes into **Extinguishing**	**OFF**	**OFF**	**OFF**
	If Water Temperature> **Th25**	→ goas in **Block**			

5.3 Check Up

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T01	If Exhaust flue gas Temperature> **Th09**	→ goes into **Run Mode**	**Max Speed**	**OFF**	**OFF**

5.4 Ignition

5.4.1 Preheating

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T02	If Exhaust flue gas Temperature> **Th09**	→ goes into **Run Mode**	**P24**	**OFF**	**ON**

5.4.2 Preload

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T03	If Exhaust flue gas Temperature> **Th09**	→ goes into **Run Mode**	**V01**	**ON**	**ON**
T29				**OFF**	

5.4.3 Fixed Phase

During the whole phase the minimum value of the exhaust flue gas temperature is saved					
Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T04	If Exhaust flue gas Temperature>**Th09**	→ goes into **Run Mode**	**V01**	**C01**	**ON**

5.4.4 Variable Phase

During the whole phase the minimum value of the exhaust flue gas temperature is saved					
Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T05	If Exhaust flue gas Temperature>**Th09**	→ goes into **Run Mode**	I Ignition: **V01** II Ignition: **V10**	I Ignition: **C01** II Ignition: **C10**	**ON**
	If Exhaust flue gas Temperature>**Th06e**	→ goes into **Stabilization**			

	Exhaust flue gas temperature higher than the saved minimum value+**D41**				
Control at the expiring of **T05**	If Exhaust flue gas Temperature<**Th06** **or** Exhaust flue gas temperature lower than the saved minimum value +**D41**	→ goas in **Re-Ignition** from 5.4.4 Variable Phase → goes into **Extinguishing** with error **Er12** if the number of attempts has been reached			

5.5 Stabilization

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T06	If Exhaust flue gas Temperature> **Th09**	→ goes into **Run Mode**	**V02**	**C02**	**ON** If Exhaust flue gas temperature<**Th02**
	If Exhaust flue gas Temperature<**Th06**	→ Re-Ignition from Variable Phase → goes into **Extinguishing** with error **Er12** if the number of attempts has been reached			
Control on the expiring of **T06**	If Exhaust flue gas temperature > **Th06**+**D01**	→ goes into **Run Mode**			
	If Exhaust flue gas temperature < **Th06**+**D01**	→ Re-Ignition from 5.4.4 Variable Phase → goes into **Extinguishing** with error **Er12** if the number of attempts has been reached			

5.6 Recover Ignition

Waiting

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13	Exhaust flue gas temperature > **Th01**	→ The Timer **T13 starts**	**V09**	**OFF**	**OFF**
Control on the expiry of **T13**	Exhaust flue gas temperature > **Th01**	→ waiting			

Brazier Cleaning

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase, performed at the end of the Waiting phase, will be present only if an output is set as Cleaning Engine and ends when the engine stops	**OFF**	**OFF**	**OFF**

Final Cleaning

T16	Exhaust flue gas temperature < **Th01**	→ Final Cleaning timer **T16** starts	**Max Speed**	**OFF**	**OFF**
Control on the expiry of **T16**	If Exhaust flue gas temperature < **Th01**	→ goes into **Check Up**			

5.7 Run Mode

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T14 Control on the expiry of **T14**	if Exhaust flue gas Temperature< Thermostat **Th03** or if Exhaust flue gas Temperature<**Extinguishing Thermostat** for the power in use	→ The timer **T14** of waiting Pre-Extinguishing starts	**User Power**	**User Power**	**OFF**
	→ Goes into **Extinguishing** with error **Er03**				
	if Exhaust flue gas Temperature> Thermostat **Th07** or if Water. Temperature> **Boiler Thermostat**	→ goes into **Modulation**			
A01=1	if room temperature>**Room Thermostat** *	→ goes into **Modulation**			
A52=1	if room temperature>Remote **Room Thermostat** *	→ goes into **Modulation**			
A01=2 o 4	if room temperature>**Room Thermostat** *	→ goes into **Standby**			
A52=2 o 4	if room temperature>**Remote Room Thermostat** *	→ goes into **Standby**			
P26=2, 3	if DHW temperature>**DHW Thermostat Th58** and Summer Mode	→ goes into **Standby**			
P26=4	If Buffer Temperature>**Buffer Thermostat Th58**	→ goes into **Standby**			
P26=0 **A45=1**	if there is not Sanitary water demand and Summer Mode	→ goes into **Standby**			
	if Exhaust flue gas Temperature> Thermostat **Th08** or if water Temperature> Thermostat **Th25**	→ goes into **Safety**			
* This condition is true if there is not sanitary water demand or if a hydraulic plant with Buffer has been selected					

5.8 Modulation

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T14	if Exhaust flue gas Temperature< Thermostat **Th03** or if Exhaust flue gas Temperature **Extinguishing Thermostat** for the power in use	→ The timer **T14** of waiting Pre-extinguishing starts	**V11**	**C11**	**OFF**
Control on the expiry of **T14**	→ Goes into **Extinguishing** with error **Er03**				
A01=2 o 4	if room temperature>**Room Thermostat** *	→ goes into **Standby**			
A52=2 o 4	if room temperature>**Remote Room Thermostat** *	→ goes into **Standby**			
A13=1	if for the time **T43 and** water temperature>**Boiler Thermostat+D23**	→ goes into **Standby**			
P26=2, 3	If DHW Temperature>**DHW Thermostat Th58** and Summer Mode	→ goes into **Standby**			
P26=4	If Buffer Temperature>**Buffer Thermostat Th58**	→ goes into **Standby**			
P26=0 **A45=1**	if there is not Sanitary water demand and Summer Mode	→ goes into **Standby**			
	if Exhaust flue gas Temperature> Thermostat **Th08** or	→ goes into **Safety**			

	if Water Temperature< Thermostat **Th25**				
* This condition is true if there is not sanitary water demand or if a hydraulic plant with Buffer has been selected					

5.9 STANDBY

When the conditions that brought the system in Standby are not there anymore, the timer **T11** starts. On its expiry, the system goes into Check Up.
If exhaust flue gas temperature > Thermostat **Th08** or water temperature > Thermostat **Th25** the system goes in Safety.

- **Standby-Extinguishing** (**A27**=**0**)

Waiting

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T57	Exhaust flue gas temperature > Thermostat **Th28**	→ the Timer **T57 starts**	**V09**	**OFF**	**OFF**
Control on the expiry of **T57**	Exhaust flue gas temperature > Thermostat **Th28**	→ waiting			

Brazier Cleaning

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase, performed at the end of the Waiting phase, will be present only if an output is set as Cleaning Engine and ends when the engine stops	**OFF**	**OFF**	**OFF**

Final Cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16	Exhaust flue gas temperature < Thermostat **Th28**	→ the Timer **T16 starts**	**Max Speed**	**OFF**	**OFF**
Control on the expiry of **T16**	→ goes into **OFF Standby**		**OFF**		

- **Standby-Maintenance** (**A27**=**1**)

Pause Phase

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
T32	Extinguishing of the combustion. On the expiry the Working phase starts	**OFF**	**OFF**	**OFF**

Working Phase

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
T33	Combustion reactivated. On the expiry of **T33** Pause phase starts	**V12**	**C12**	

5.10 SAFETY

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T15	Probe S1 Exhaust flue gas< Thermostat **Th08 and** Probe S1 Temp.< Thermostat **Th25**	→ returns to the previous state	**V12** if previously was in **Standby**, it continues with the same power if it was in **Modulation**	**OFF**	**OFF**
Control on the expiry of **T15**	→ Goes into **Extinguishing** with error **Er05** or **Er04**				

5.11 EXTINGUISHING

Waiting

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13	Exhaust flue gas temperature > Thermostat **Th01**	→ The Timer **T13 starts**	**V09**	**OFF**	**OFF**
Control on the expiry of **T13**	Exhaust flue gas temperature > Thermostat **Th01**	→ waiting			

Brazier Cleaning

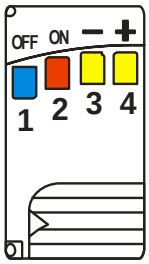
Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	This phase, performed at the end of the Waiting phase, will be present only if an output is set as Cleaning Engine and ends when the engine stops	**OFF**	**OFF**	**OFF**

Final Cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16	Exhaust flue gas temperature < Thermostat **Th01**	→ The Timer **T16 starts**	**Max Speed**	**OFF**	**OFF**
Control on the expiry of **T16**	→ goes into **Off** if there are no errors, otherwise goes into **Block**		**OFF**		

6 FUNCTIONS

6.1 RADIO CONTROL SYTX



Keys

Key 1: system extinguishing
key 2: system ignition
keys 3 and 4: decrease/increase of the combustion power

Code Change

For the radio control:

- open the battery door by sliding it towards right
- Modify the configuration of the internal dip-switches and close

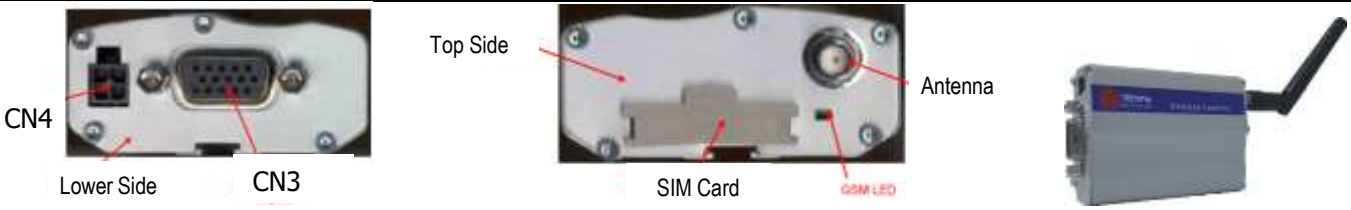
For Controller:

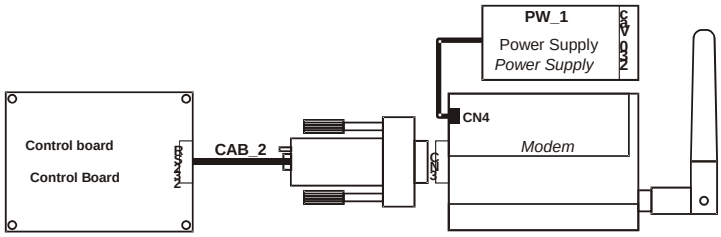
- cut off the power supply to the control board
- connect to the mains power supply again while pressing for 5 seconds any button of the radio control until the emission of the acoustic signal coming from the controller that will confirm that the new code has been registered

6.2 MODEM

The system provides a Modem module upon request, that allows you to send SMS to the stove for ignition, extinguishing, checking the stove status and receive information about possible Block conditions.
You need to connect the modem to the RS232 port of the control board through the provided cables and connectors and you also need to connect it to the power supply through the dedicated adapter for power supply.
To ensure the proper operation:

- Use a SIM card from any mobile operator that supports GSM data.
  When inserting/disinserting the SIM card you must do it while the Modem is not connected to the power supply
- Disable the SIM PIN request





Two LED signal the modem status:

LED GSM	*LED activity*	*Modem Status*
ON	LED ON fixed	The modem is open and ready but still not registered in the web or the PIN request on the SIM card is enabled or the antenna is not connected (maybe there is no signal)
	LED flashing (every 2 seconds)	The Modem is ON and ready for incoming calls
	LED flashing (every second)	The Modem is on and is communicating (Voice, data or Fax)
OFF	LED OFF	The Modem has no power supply or reset phase

The user can send an SMS to the Modem SIM with one of the key word written in uppercase or not.

Start	This word send the stove in ignition if it was not already ON. The Modem send back a message with system status including code errors if any
Stop	This word send the stove in extinguishing if it was not already OFF. The Modem send back a message with system status including code errors if any
Status	This word demands the stove status. The Modem send back a message with system status including code errors if any
Learn	With this word the system learns to which number it needs to send an SMS if in Block. When in Block, the Modem sends immediately a message with the stove status and the error to the learnt number.
Reset	Allows the system unblock

The status name in the SMS sent by the modem is:

SMS	*System State*	*SMS*	*System State*

Block	Block, Extinguishing with error message	Standby	Standby
Off	Off, Extinguishing, Extinguishing in Ignition phase	On	Other Statuses

6.3 Combustion Management

6.3.1 Combustion Fan Speed

The parameter **P25** sets the regulation mode of the speed of the Combustion Fan	
P25=0	Combustion Fan without encoder: the speed is defined by the set value of the tension [Volt].
P25=1	Combustion Fan with Encoder: the speed is defined by the set value of the revolutions [RPM]. If there is signal but the regulation has not succeeded, the system goes into Block with alarm **Er08**. If the sensor breaks and there is no signal, the system goes into Block with alarm **Er07**.
P25=2	Combustion Fan with Encoder: the speed is defined by the set value of the revolutions [RPM]. If there is signal but the regulation has not succeeded, the system goes into Block with alarm **Er08**. If the sensor breaks and there is no signal, the system goes into Block with alarm **Er07**. Resetting the error the system switches automatically to functioning **P25**=0.

6.3.2 Auger Speed

The parameter**P81** sets the regulation mode of the Auger	
P81=**0**	Auger without Encoder managed in pause-work, con measurement unit expressed in seconds and regulation step of 0, 1.
P81=1	Auger with Encoder managed in RPM. If there is signal but the regulation has failed, the system goes into Block with alarm **Er48**. If the sensor breaks and there is no signal, the system goes into Block with alarm **Er47**.
P81=2	Auger with Encoder managed in RPM. If there is signal but the regulation has failed, the system goes into Block with alarm **Er48**. If the sensor breaks and there is no signal, the system goes into Block with alarm **Er47**. Resetting the error the system automatically switches to functioning **P81**=0.

6.3.3 Combustion Standby

Standby is a temporary OFF mode of the flame due to the fact that the desired temperature in the room has been reached. If you want the stove to go in Standby you can activate this function from the Enable Menu setting the parameters **A01**, **A52** and **A13**. If:

A01, **A52**=1 → if room temperature>Room Thermostat the system goes into Modulation
A01, **A52**=2, 4 → if room temperature>Room Thermostat the system goes into Standby
A13=0 → if water temperature>Boiler Thermostat the system goes into Modulation
A13=1 → if water temperature>(Boiler Thermostat**D23**) the system on the expiry of the timer **T43** goes into Standby

To come out of Standby set the hysteresis value of the thermostat.

6.3.4 Automatic Combustion Power

When setting the Working Power the user can set the Automatic mode [A] or Manual [M]; if you choose the Automatic mode, the power will be automatically selected according to the room temperature and to the value of the set Boiler Thermostat **Th24**. Se:

- water temperature≤**Th24**–**D08** → the system works at maximum Power
- **Th24**–**D08**<water temperature<**Th24**→ the combustion power is chosen proportionally (the bigger the difference between water temperature and the value of the Thermostat **Th24** the higher will be the chosen power)
- water temperature≥**Th24** → the system works ay Power 1 or, if enabled, at Modulation power

The parameter **D08** must be multiples of the number of functioning powers minus 1.

Example: Mode=[A], **Boiler Thermostat**=60°C, **D08**=20 °C, **P03**=5

Boiler Temperature °C	≤ 40	40 ÷ 45	46 ÷ 50	51 ÷ 55	56 ÷ 60	≥ 60
Work Power	5	4	3	2	1	1 o Mod.

6.3.5 Changing Combustion power delay

When the system comes out of Ignition to go into **Normal**, the Combustion Power, starting from Power 1, goes to operating power increasing its value with the delay time same as **T18**.
The other manual or automatic power changes are managed with the delay time same as **T17** timer.

6.3.6 Pellet Load Correction

The user modifies the On times/speed of the pellet load with Step – 7 ÷ 7. **P15** is the percentage value of each Step and it is applied to the default values of the Work Powers. The calculated values are within a defined 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

6.3.7 Combustion Fan Correction

The user modifies the Combustion Fan Speed with Step –7 ÷ 7. **P16** is the percentage value of each step and it is applied to the default values of the Work Speed. The calculated values are within the defined 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

6.4 Configurable Inputs

It is possible to set the inputs IN2, IN5, IN6, IN8 and IN9 according to the value of their management parameters.(**P74**, **P70**, **P72**, **P71** and**P76**).

6.4.1 Door Sensor

If the door is open, the panel displays the message '*Port*'. The Auger stops working and, if the system is not Off or in the waiting phase of Standby, the Combustion Fan works at **P22** speed. If the door remains open for more than **T92** seconds the system goes into Block with error**Er44**. If you do not use the contact short-circuit pins..

6.4.2 Pellet Thermostat

When the contact opens there is backfire:

- the system goes into Block with alarm message Er06
- if
  - a configurable output has been set as Auger 2 (**P44**=17, product with 2 Augers) Auger stops and Auger 2 works for the time **T34**
  - a configurable output is set as Safety Valve (**P44**=1, product with one Auger and Safety Valve) the Auger stops and Safety Valve closes
  - no configurable output is set as Auger 2 or Safety Valve (product with 1 Auger) the Auger keeps working for the time**T34**

If the product includes only one Auger and the Combustion Fan is Off, it will switch on at the speed**V12**.

6.4.3 Room Thermostat

According to the value of the parameter **A01** you will have:

- **A01**=0
  open contact: the system goes into Extinguishing
  closed contact: the system goes into Ignition
- **A01**=1
  closed contact: the system goes into Normal
  open contact: the system goes into Modulation
- **A01**=2
  closed contact: the system goes into Normal
  open contact: the system goes into Standby
- **A01**=3
  closed contact: the system switches the system pump on
  open contact : if the water temperature exceeds the value of the system pump activation thermostat (**Th19** or **Th59**), the system blocks the system pump until the thermostat**Th21** or **Th78** are reached (if **P26**=4).
- **A01**=4
  closed contact: the system reactivates the system Pump and switches to Normal
  open contact : the system switches to Standby and blocks the system pump as in case 3.
- **A01**=5
  closed contact: Heating Fan operating regularly
  open contact: the Heating Fan works at Power 1

If there is Sanitary Water demand and the Pump is also used for sanitary, it is not blocked by the Room thermostat.
If **A01**=1, 2, 3, 4, 5 if you don't use the input short-circuit pins..

6.4.4 Flow switch

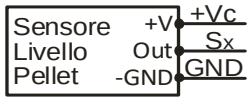
Enable one of the configurable inputs as flow switch if you set a hydraulic plant involving its use (**P26**=0, 5). If selected and not used, set the terminals free.

6.4.5 Pellet Level Sensor

When the level of the fuel drops below the set threshold, the system, after having signalled the lack of fuel for a **T24** time, goes into Extinguishing with error **Er18**. If you put the fuel in the tank the system stops signalling the error and it is possible to turn it on again.
When the system includes an engine for the load of the pellet, in case of lack of fuel, this engine is switched on. Setting the parameter **P09** it is possible to reverse the sensor reading.
You can connect to the board different type of sensor.

Sensors with a DC output
The temperature controller is available only for PNP sensors and the value of the output signal can't exceed 12V.
Sensors with an output until 5V can be connected to any input. Sensors with an output higher than 5V (MAX 12V) can only be connected to inputs 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 contacts output
Connections:
See section 2.1 about electrical connections.

6.4.6 DHW/Buffer Probe

Enable the configurable input as DHW/Buffer Probe if a hydraulic plant including its use has been selected (**P26**=2, 3, 4).

6.4.7 Limit Switch Cleaning Engine

The contact is used in combination with the Cleaning Engine.

6.4.8 Room Probe

According to the value of the parameter **A01** you will have:

- **A01**=0
  Room Thermostat not reached: the system switches to Ignition
  Room Thermostat reached: the system switches to Extinguishing
- **A01**=1
  Room Thermostat not reached: the system switches to Run Mode
  Room Thermostat reached**:** the system switches to Modulation
- **A01**=2
  Room Thermostat not reached**:** the system switches to Run Mode
  Room Thermostat reached: the system switches to Standby
- **A01**=3
  Room Thermostat not reached: the system switches the system pump on
  Room Thermostat reached: if the water temperature exceeds the value of the system pump activation thermostat (**Th19** or **Th59**), the system block the system pump until it reaches the thermostat**Th21** or **Th78** (if **P26**=4)
- **A01**=4
  Roon Thermostat not reached: the system reactivates the system Pump and switches to Run Mode
  Room Thermostat reached: the system goes into Standby and blocks the systempump as in case 3
- **A01**=5
  Room Thermostat not reached: Heating fan operating regularly
  Room Thermostat reached: the Heating Fan works at Power 1

If there is sanitary water demand and the Pump is also used for sanitary, it is not blocked by the Room Probe.
If **A01**=1, 2, 3, 4, 5 if you don't use the input short-circuit pins..

6.4.9 PRIMARY AIR REGULATOR

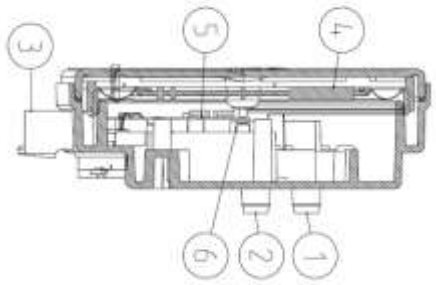
It detects the air flow speed in the induction pipe of the stove/boiler.
The reading range is 0÷2000. If the probe is not connected the speed value will be 0.

Connections:

Sensor	IN6	IN7
Vc (+12V) o *+V (+5V)* *Out* *-GND*	pin 31 o pin 32 pin 33 pin 34	pin 31 o pin 32 pin 35 pin 36

A Differential Pressure Sensor or a Flow switch can be used.
If you use a Differential 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 air flow for each power (parameters **FL22**÷**FL30**).
   - The air flow 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 he 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 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.

6.4.10 Exterior Chrono

The contact is set as Exterior Chrono: when the contact closes the system goes into Ignition, when the contact opens it goes into Extinguishing.

6.4.11 Auger Encoder Input

Use the input if using an Auger with encoder.

Connections:

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

6.4.12 Water Pressure Sensor

Use the input if the system includes a pressure sensor.

Connections:

Sensor	IN6	IN7
+Vc (+12V) o *+V (+5V)*	pin 31 o pin 32	pin 31 o pin 32
Out	pin 33	pin 35
-GND	pin 34	pin 36

6.5 Configurable Outputs

It is possible to set the output V2 depending on the value of the parameter **P44**

6.5.1 Pellet Safety Valve

The output is active when the Auger is enabled (in Check Up, Ignition, Stabilization, Run Mode, Modulation and Safety); the Auger will activate only when the timer **T40**expires.
The Pre-heating Ignition phase starts only when the timer **T40** expires.

6.5.2 Load Engine

When the Pellet Level Sensor signals the lack of material, the output for the load of the tank is activated. If in a time **T24** the set pellet level is not reached, the system goes into Extinguishing and the display shows the error message **Er18**. If the tank is manually load, it is possible to reset the error and turn on the system again. On the other hand, if the pellet level is reached, the loading of the material goes on for a time **T23**.

6.5.3 Output under Thermostat

The output is managed by the thermostat < **Th56**: over this value it is supplied, otherwise it is Off.

6.5.4 Combustion Fan 2

The output is on when the Combustion Fan 1 is on and its power is the same as the first Fan.

6.5.5 Heating Fan

The Heating Fan works as described below:

- it is on only if the Exhaust flue gas Temperature is higher than the Thermostat **Th05**
- if **P06**>1 or the selected power is not automatic and **A01**=1, 2, 4, for Room Thermostat it works at Power 1
- in any operating mode if **A01**=5, for Room Thermostat it works at Power 1
- for safety reasons, if the exhaust flue gas is higher than the thermostat **Th07** or **Th08**, the fan works at maximum power (230 V).

When setting the heating power the user can choose between the Automatic mode [A] or the Manual mode [M]; if you choose the Automatic the power will automatically selected according to the parameter value **P06**.
If **P06=**1 the heating power is the same as the Combustion power, if **P06=**2 the heating power is automatically selected by the system in relation to the exhaust flue gas temperature, the value of the Thermostat **Th05** and the parameter **D04**, if **P06=**3 the heating power is automatically selected by the system in relation to room temperature , the value of the Room Thermostat in use and the parameter **D05** o **D13**.

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

Exhaust flue gas 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

6.5.6 Air Valve

The output is on when the Combustion Fan 1 is on.

6.5.7 Error message

The output is on when the Block.

6.5.8 Electrovalve/Pump P2

The output manages 2 wires electrovalve or a not high efficiency pump.
If you use the 2-3 ways module to switch the output from triac to relay in exchange, it is possible to connect a 3 wires electrovalve or a high efficiency pump.
The functioning of the connected charges depends on the selected hydraulic plant.

6.5.9 Auger 2

The output is activated when Auger 1 is active (in Ignition, Stabilization, Run Mode and Modulation) and gets deactivated, in relation to the deactivation of Auger 1, only r when the time**T27**expires.

6.5.10 Cleaning Engine

In Off and Block for safety reasons the engine is always stopped. The system does not recover from Check Up mode until the engine has been repositioned.
The engine switches on:

- for the time **T86**, in Extinguishing, Recover Ignition and Standby-Extinguishing before the Final Cleaning phase. The fan and the auger are stopped; the cleaning is repeated **P50** times. To disable the cleaning during these phases set**P50**=0.
- cyclically, for the time **T141**÷**T148**, when the working time in Run Mode and Modulation exceeds the value of the parameter**T87**. Combustion parameters don't change; the cleaning is repeated **P49** times. To disable the cleaning in run mode set **P49**=0.

The engine management in this case can be performed with or without a limit switch:

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

Phase	*Description*
Phase 1	the system switches on the engine and checks the limit switch status: when it opens switches to Phase 2. If on the expiry of the timer **T85** the limit switch is still closed, the system goes into Block with error**Er25**.
Phase 2	The maximum duration of this phase is **T86** or **T141**÷**T148** seconds: within this time, the engine must have completed its forward movement or the entire cleaning cycle. At the end, the system switches to Phase 3.
Phase 3	The maximum duration of this phase is **T99** seconds: during this time, the engine is Off and to must have repositioned in the starting position (the limit switch must be closed). At the end, the system switches to Phase 4. If on the expiry of **T99**the limit switch should be open, the system goes into Block with error**Er25**.
Phase 4	If the number of performed cleaning cycles is less than the number of set cycles, the system starts another cleaning cycle starting from Phase 1, otherwise the Cleaning function is completed

If during normal operation, the temperature controller should read the limit switch open, the engine is activated to try to close the contact; if it fails, the system goes into Block with error message **Er25**.

- management without limit switch:

Phase	*Description*
Phase 1	The system activates the engine for a time equal to **T86** or **T141**÷**T148** seconds: within this time, the engine must have completed its forward movement or the entire cleaning cycle. At the end, the system switches to Phase 2.
Phase 2	The duration of this phase is **T99** seconds: during this time, the engine is Off and to must have repositioned in the starting position. At the end, the system switches to Phase 3.
Phase 3	If the number of performed cleaning cycles is less than the number of set cycles, the system starts another cleaning cycle starting from Phase 1, otherwise the Cleaning function is completed

6.6 Unblock Auger Function

This feature is available only for the Auger engines with Encoder (**P81**=1, 2) and it will make the engine start again if it blocks due some fuel pieces. If the temperature controller reads the speed of the Auger at 0 for some seconds when it should be working it gives to the auger a series of pulses at maximum speed trying to unblock it. If it doesn't work, the system goes into Extinguishing with error **Er47**. The pulses have a duration of 2 seconds and the pause time between one pulse and the other is equal to the parameter **P118**.

6.7 System Maintenance 1 Function

When the working hours set through the parameter **T66** are exceeded, there is a signal for calling service. The display shows the message '*Service*' and the system if **P86**=1, goes into Block. To unblock the system, or if **P86**=0 to make the message disappear you have to enter the Reset Service Menu. To disable this function set **T66**=0; to enable it set **T66**>0.

6.8 System Maintenance 2 Function

When the working hours set through the parameter **T67** are exceeded it is necessary to clean the system. On the display there is the message '*Clean*' and there is a periodical sound. To stop the sound enter the Cleaning Reset Menu. To disable this function set **T67**=0; to enable it set **T67**>0.

6.9 Extinguishing in Ignition Phase

When the system has already gone through the Pre-heating Phase of the Ignition and it is turned Off by an external device (for example the interior chrono, the exterior chrono or the modem), it finishes the phases of Ignition, Stabilization and when the Run Mode set is reached it goes into Extinguishing. On the display there is the message "*Ignition Block*". If there is any error the system goes into Extinguishing with error.
If you press the ignition key, the immediate Extinguishing or the Re-Ignition is available..

6.1 Periodic Brazier Cleaning

When the stove has reached the Run Mode, or if **A61**=1 even in Modulation, the system goes automatically into periodic brazier cleaning.
Within intervals of the timer **T07** (minutes) and for the duration of the Timer **T08** (seconds), the values of the Combustion Fan and the values of Auger will vary in the percentage of **P92** and **P93** in relation to the set values.
The minimum and maximum reachable values are defined by the parameters **P14** and**P30** for the Fan and **P27** and **P05** for the Auger; if you set a value at -100% its output will be deactivated. If **P92** is set to 101 the Combustion Fan will be set to its maximum value.
When cleaning is in progress, the display shows the message "*Cleaning On*".

6.2 Lack of Voltage Power Supply

If there is lack in voltage supply, the system will save the most important functioning data.
When the supply voltage comes back the system will evaluate the saved data and, if the recover of the data is correct, according to the value of the parameter **A53** you will have:

- Recover Status mode 0 (**A53**=0)
  - if the power supply lacked for less than **T88** the system returns to the same status in which it was
  - if the system was ON and power supply lacked for a time between **T88** and **T89** the system goes into Re-Ignition
  - if the power supply lacked for a time longer than **T89** the system goes into Block with error Er15
- Recover Mode state 1 (**A53**=1)
  - if the power supply lacked for less than **T88** the system returns to the same status in which it was
  - if the system was ON and the power supply lacked for a time longer than **T88** the system goes into Recover Ignition

6.3 Fast Extinguishing Function

This function allows to bring the system in Off without having the Extinguishing phase; the control of the system errors is guaranteed. To activate it follow the instructions:

1. bring the system into Extinguishing without errors
2. cut off the power supply
3. connect to the mains power supply pressing the key On/Off for 3 seconds

6.4 Automatic Extinguishing Function

If the parameter **A40** is different from 0 the system after **T84** minutes working in Run Mode or Modulation goes into Recover Ignition If **A40**=2 the duration time of the Recover Ignition. Extinguishing phase is **T118** seconds and the thermostats are not taken into account.

6.5 Hydraulic Plant

6.5.1 Hydraulic plant selection

Setting the parameter **P26** you can choose the most suitable configuration of the hydraulic plant.

System Pump Block for Room Thermostat/Probe:

- it is available only over the value of pump activation thermostat **Th19** or **Th59** (for plant 4)
- in configuration 0 and 2 if there is sanitary water demand the Pump P1 is not blocked and, if previously blocked, is reactivated

Fan and Auger management when there is sanitary water demand:

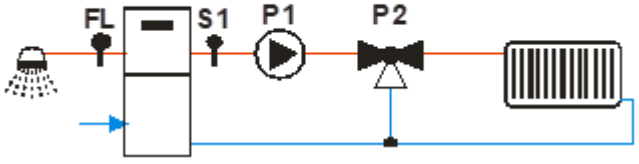
When there is sanitary water demand, the system is in Run Mode, management is automatic and is working at maximum power, Fan and Auger values are modified by the respective parameters **P108** and **P109**.

Electrical Connections:

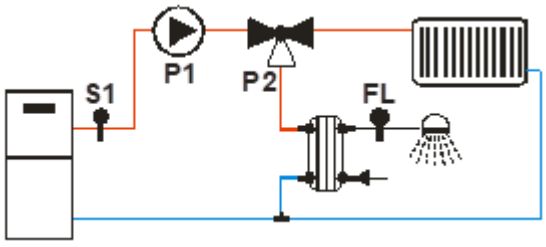
S1=Boiler Probe->Pin 26–27 **S2**=DHW Probe/Buffer **FL**=Flow switch
P1=Pump->Pin 14-15 **P2**=Electrovalve/Pump->5-6

CONFIGURATION 0

Setting the parameter **P26** = **0** you will have the configuration shown in pic.1 and pic.2.



pic. 1



pic. 2

Heating

The Pump switches on over the Thermostat **Th20**. To avoid the freezing of the water the Pump switches on if the water temperature drops below the thermostat **Th18**. If the water temperature exceeds the value of the thermostat **Th21** for safety reasons the Pump is always on.

Recirculation

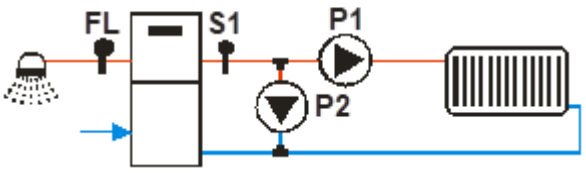
When there is sanitary water demand and the water temperature in the boiler exceeds the value of the thermostat **Th19** or the water temperature in the boiler exceeds the value of the thermostat **Th20** the Valve is On.
If the water temperature exceeds the value of the thermostat **Th21** the Valve switches to the plant.

Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th20** = 30 °C, **Th21** = 70 °C

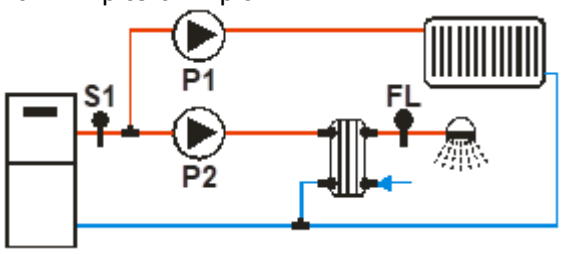
Water temperature	*Flow switch*	*Mode*	*Valve P2*	*Pump P1*
T < 5°C			plant (OFF)	**ON**
5°C ≤ T< 30°C			plant (OFF)	OFF
30°C ≤ T< 40°C			recirculation (**ON**)	**ON**
40°C ≤ T< 70°C	open	Winter	plant (OFF)	**ON**
		Summer	recirculation (**ON**)	OFF
	closed		recirculation (**ON**)	**ON**
T≥70°C			plant (OFF)	**ON**

CONFIGURATION 1

Setting the parameter **P26** = **1** you will have the configuration shown in pic3 or in pic. 4:



pic. 3



pic. 4

Heating

P1 Pump switches on over the Pump Activation Thermostat**Th19** and when there is sanitary water demand is blocked. To avoid the freezing, P1 Pump switches on if the water temperature drops below the thermostat **Th18**. If the water temperature exceeds the value of the thermostat **Th21** for safety reasons P1 Pump is always on.

Recirculation

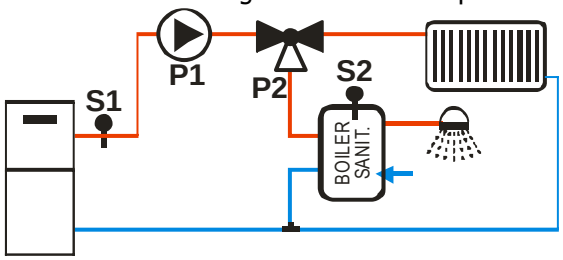
When there is sanitary water demand and the water temperature in the boiler exceeds the value of the thermostat **Th19** or the water temperature in the boiler exceeds the value of the thermostat **Th20** P2 Pump switches on.
If the water temperature exceeds the value of the thermostat **Th21** P2 Pump switches off.

Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th20** = 30 °C, **Th21** = 70 °C

Water temperature	*Flow switch*	*Mode*	*Pump P2*	*Pump P1*
T < 5°C			OFF	**ON**
5°C ≤ T< 30°C			OFF	OFF
30°C ≤ T< 40°C			**ON**	OFF
40°C ≤ T< 70°C	open	Winter	OFF	**ON**
		Summer		OFF
	closed		**ON**	OFF
T≥70°C			OFF	**ON**

CONFIGURATION 2

Setting the parameter **P26** = **2** you will have the configuration shown in pic.5:



pic. 5

Heating

The Pump P1 switches on if the water temperature in the boiler exceeds the value of the thermostat **Th20** and the difference between the temperature detected by the probe S1 and the one detected by the probe S2 is higher than the thermostat **Th57**.
The Pump P1 switches on if the <water temperature in the boiler exceeds the value of the t<thermostat **Th19**. To avoid the freezing of the water the Pump switches on if the water temperature drops below the thermostat **Th18**. If the water temperature exceeds the value of the thermostat **Th21** for safety reasons the Pump is always on.

Sanitary

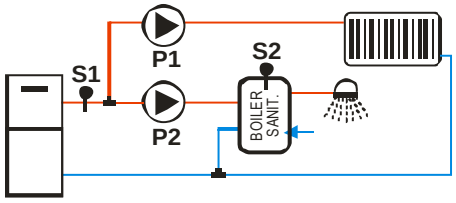
The Valve is turned towards the Sanitary Buffer tank if the water temperature in the boiler does not exceed the value of the Thermostat **Th58** and the water temperature in the boiler does not exceed the value of the Thermostat **Th20**.
For safety reason if the water temperature in the boiler exceeds the value of the thermostat **Th21** the Valve switches to the plant.

Example: **Th18** = 5 °C, **Th19** = 65 °C, **Th20** = 50 °C, **Th21** = 70 °C, **Th57** = 5 °C, **Th58** = 55 °C

Probe S1 Temp.	*Probe S2 Temp.*	*Mode*	*Differential*	*Valve P2*	*Pump P1*
T < 5°C				plant (OFF)	**ON**
5°C ≤ T< 50°C	T > 55°C	Winter		plant (OFF)	OFF
	T < 55°C	Winter		recirculation (**ON**)	OFF
		Summer		recirculation (**ON**)	OFF
50°C ≤ T< 65°C	T < 55°C		< 5°C	recirculation (**ON**)	OFF
			≥ 5°C	recirculation (**ON**)	**ON**
	T > 55°C	Winter		plant (OFF)	OFF
		Summer	< 5°C	recirculation (**ON**)	OFF
		Summer	≥ 5°C	recirculation (**ON**)	**ON**
65°C ≤ T< 70°C	T < 55°C		< 5°C	recirculation (**ON**)	OFF
			≥ 5°C	recirculation (**ON**)	**ON**
	T > 55°C	Winter		plant (OFF)	**ON**
		Summer	< 5°C	recirculation (**ON**)	OFF
		Summer	≥ 5°C	recirculation (**ON**)	**ON**
T≥70°C				plant (OFF)	**ON**

CONFIGURATION 3

Setting the parameter **P26** = **3** you will have the configuration shown in pic.6:



pic. 6

Heating

P1 Pump switches on over the Thermostat **Th19**if the difference between the temperature detected by the probe S1 and the one detected by the probe S2 is lower than the thermostat **Th57**. To avoid the water freezing the Pump switches on if the water temperature drops below the thermostat **Th18** or if it exceeds the value of the thermostat **Th21**.

Sanitary

P2 Pump has to heat the water inside the DHW Buffer. It will switch on only if water temperature in the boiler exceeds the value of the thermostat**Th20** and the difference between the temperature detected by the probe S1 and the one detected by the probe S2 is greater than the thermostat **Th57**.

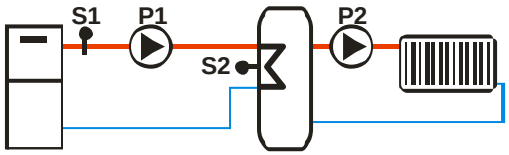
For safety reason, if the water temperature in the boiler exceeds the value of the thermostat **Th21** P2 Pump switches off.

Example: **Th18** = 5 °C, **Th19** = 65 °C, **Th20** = 50 °C, **Th21** = 70 °C, **Th57** = 5 °C, **Th58** = 55 °C

Probe S1 Temp.	*Probe S2 Temp.*	*Mode*	*Differential*	*Pump P2*	*Pump P1*
T < 5°C				OFF	**ON**
5°C ≤ T< 50°C				OFF	OFF
50°C ≤ T< 65°C	T < 55°C		< 5°C	OFF	OFF
			≥ 5°C	**ON**	OFF
	T > 55°C		< 5°C	OFF	OFF
		Winter	≥ 5°C	OFF	OFF
		Summer	≥ 5°C	**ON**	OFF
65°C ≤ T< 70°C	T < 55°C		< 5°C	OFF	OFF
			≥ 5°C	**ON**	OFF
	T > 55°C	Winter		OFF	**ON**
		Summer	< 5°C	OFF	OFF
		Summer	≥ 5°C	**ON**	OFF
T≥70°C				OFF	**ON**

CONFIGURATION 4

Setting the parameter**P26** = **4** you will have the configuration shown in pic. 7:



pic. 7

Buffer Load

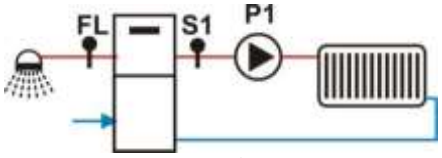
If the temperature in the boiler is higher than the Pump Activation Thermostat **Th19**, the system heats the water in the Buffer tank if there is a difference between the two probes (temperature in the boiler menus temperature in the Buffer tank greater than differential thermostat **Th57**). For safety reason if the water temperature in the boiler exceeds the value of the thermostat **Th21** P1 Pump switches on. P2 switches on over the Thermostat **Th59**.

Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th21** = 70 °C, **Th57** = 5 °C,**Th59** = 40 °C

Probe S1 Temperature	*Differential*	*Pump P1*	*Pump P2*
T < 5°C		**ON**	OFF
T < 40°C		OFF	OFF
T ≥ 40°C	< 5°C	OFF	**ON**
	≥ 5°C	**ON**	**ON**
T ≥ 70°C		**ON**	**ON**

CONFIGURATION 5

Setting the parameter**P26** = **5** you will have the configuration shown in pic.8:



pic. 8

Aux 1 output switches on if the water temperature in the boiler exceeds the value of the thermostat **Th56**.

Heating

The Pump switches on over the Pump Activation Thermostat **Th19**.

To avoid the freezing of the water the Pump switches on if the water temperature drops below the thermostat **Th18**. if the water temperature exceeds the value of thel thermostat **Th21** or safety reasons the Pump is always on.

Sanitary

If there is sanitary water demand the system blocks the Pump.

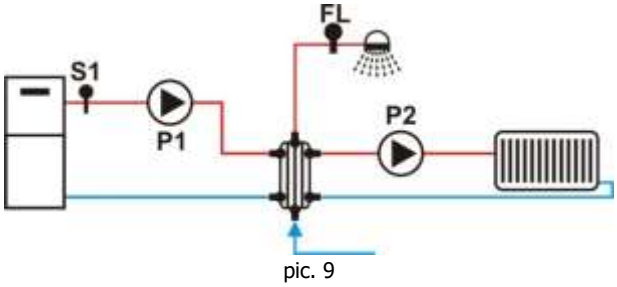
V2 output, if set, switches on if the water temperature in the boiler exceeds the value of the thermostat **Th56**.

Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th21** = 70 °C

Water temperature	*Mode*	*Flow switch*	*Pump*
T < 5°C			**ON**
5°C < T< 40°C			OFF
40°C < T< 70°C	Summer		OFF
	Winter	**closed**	OFF
	Winter	open	**ON**
T>70°C			**ON**

CONFIGURATION 6

Setting the parameter **P26** = **6** you will have the configuration shown in pic.9:



pic. 9

Heating

P2 Pump switches on over the Thermostat**Th19** if there isn't sanitary water demand.

To avoid the water freezing the Pump P2 switches on if the water temperature drops below the thermostat **Th18** or if exceeds the value of the thermostat **Th21**.

Sanitary

P1 Pump switches on over the thermostat **Th20**. To avoid the water freezing, Pump P2 switches on if the water temperature drops below the thermostat **Th18**.

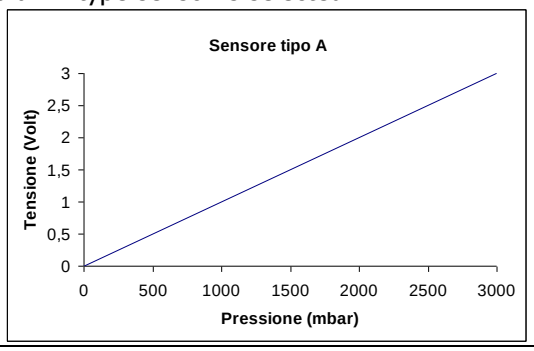
Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th20** = 30 °C, **Th21** = 70 °C

Probe S1 Temp.	*Flow switch*	*Mode*	*Pump P1*	*Pump P2*
T < 5°C			**ON**	**ON**
5°C ≤ T< 30°C			OFF	OFF
30°C ≤ T< 40°C			**ON**	OFF
40°C ≤ T< 70°C	**closed**		**ON**	OFF
	open	Winter	**ON**	**ON**
		Summer	OFF	OFF
T ≥ 70°C			**ON**	**ON**

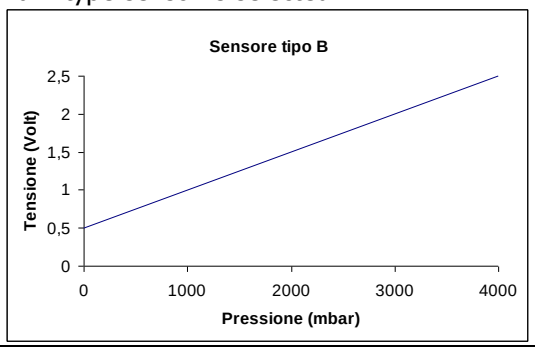
6.5.2 Pressure Sensor Selection

Setting the parameter**P20** you can choose the Pressure Sensor to be used. If:

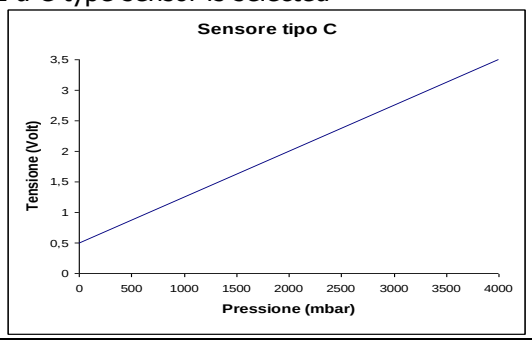
P20=0 an A type sensor is selected



P20=1 a B type sensor is selected



P20=2 a C type sensor is selected



6.5.3 Sanitary function

In hydraulic plants with flow switch or with sanitary buffer tank, if there is sanitary water demand Sanitary function switches on and the Boiler Thermostat becomes equal to the value of the Thermostat **Th21**-**Ih21**. When there is no longer sanitary water demand, Sanitary function shall end on the expiry of the time**T68**.

6.5.4 Pump and Valve seizing

If the Pump remains switched off for a time **T42** it will switch on for the time **T41**. If the Valve remains switched off for a time **T42**, it will switch on for the time **T46**.

7 System Menu Parametrization (TPAr)

7.1 Auger Menu (TP01)

If you have the Encoder version (parameter **P81**=1, 2) the values are expressed in RPM, if you have the version without encoder (**P81**=0) in seconds. The regulation of the Auger On times can be set with step of 0.1 seconds, the speed with step of 10 RPM. The set/calculated values are automatically defined by the limits **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]	
C12 *	Standby Power	0	**P05**	[s]	
		0/**P27**		[RPM]	
P05	Auger Period Total Time	4	60	[s]	
	Maximum Auger Speed	200	3000	[RPM]	
P15	Correction Step Value of the Auger values	1	20	[%]	
P27	Auger On Minimum Time	0	60	[s]	
	Auger Minimum Speed	200	3000	[RPM]	
P35	Number of pulses for revolution	1	10	[nr]	
P81	Auger management: 0=without Encoder, 1=with Encoder, 2=with Encoder auto. If **P81**=2 the system works with encoder management. If regulation fails or there is no encoder signal, the system goes into block with error **Er47**/**Er48**. If the system goes into Block with error **Er47** with the alarm reset the system can start again in mode **P81**=0.	0	2	[nr]	
P93	Percentage variation of speed/time of the Auger when is On during the Periodic Cleaning	-100	100	[%]	
P109	Percentage variation of speed/time of the Auger when there is sanitary water demand	-100	100	[%]	
P118	Auger Off time in seizing function	1	60	[s]	

* it changes with the combustion recipes

7.2 Combustion Fan Menu (TP02)

Setting of the speed of the Combustion Fan for each functioning power/phase. In case of Encoder version (parameter **P25**=1, 2) the values are expressed in RPM, for the version without encoder the values are expressed (**P25**=0) in percentage. The set/calculated values are automatically defined within the limits **P14** and **P30**.

Code	Description	Min	Max	U	Def.
V01 *	Ignition Speed	**P14**	**P30**	[V]/[RPM]	
V02 *	Stabilization Speed	**P14**	**P30**	[V]/[RPM]	
V03 *	Power Speed 1	**P14**	**P30**	[V]/[RPM]	
V04 *	Power Speed 2	**P14**	**P30**	[V]/[RPM]	
V05 *	Power Speed 3	**P14**	**P30**	[V]/[RPM]	
V06 *	Power Speed 4	**P14**	**P30**	[V]/[RPM]	
V07 *	Power Speed 5	**P14**	**P30**	[V]/[RPM]	
V08 *	Power Speed 6	**P14**	**P30**	[V]/[RPM]	
V09 *	Speed in Extinguishing	**P14**	**P30**	[V]/[RPM]	
V10 *	Speed in Second Ignition	**P14**	**P30**	[V]/[RPM]	
V11 *	Speed in Modulation	**P14**	**P30**	[V]/[RPM]	
V12 *	Standby Power	**P14**	**P30**	[V]/[RPM]	
V24 *	Speed in Ignition-Preheating	0/**P14**	**P30**	[V]/[RPM]	

P14	Combustion Fan Minimum Speed	0	230	[V]	
		300	2800	[RPM]	
P16	Value of the Fan speed correction step	1	20	[%]	
P22	Speed with door open	0/**P14**	**P30**	[V]/[RPM]	
P25	Combustion Fan management: 0=without Encoder, 1=with Encoder, 2=with Encoder auto. If **P25**=2 the system works with encoder management. If regulations fails or there is no encoder signal, the system goes into block with error **Er07**/**Er08**. If the system goes into Block with error **Er07** with the alarm reset the system can start again in mode **P25**=0.	0	2	[nr]	
P29	Number of pulses for revolution	1	10	[nr]	
P30	Combustion Fan Maximum Speed	0	230	[V]	
		300	2800	[RPM]	
P92	Percentage variation of the Combustion Fan speed during the Periodic Cleaning	-100	101	[%]	
P108	Percentage variation of the Combustion fan speed when there is sanitary water demand	-100	100	[%]	

7.3 Heating Fan Menu (TP03)

Setting of the speed of the Heating Fan for each functioning power.

Code	Description	Probe	Min	Max	U	Def.
F01	Power Speed 1		0	230	[V]	
F02	Power Speed 2		0	230	[V]	
F03	Power Speed 3		0	230	[V]	
F04	Power Speed 4		0	230	[V]	
F05	Power Speed 5		0	230	[V]	
F06	Power Speed 6		0	230	[V]	
P06	Heating Power Management: 1=same as combustion power; 2=proportional to exhaust flue gas temperature; 3=proportional to local room temperature		1	3	[nr]	
P95	Minimum Heating Power that can be set		0	1	[nr]	
A04	Heating mode: 0=manual/automatic; 1=only automatic		0	1	[nr]	
Th05	Heating Fan Activation	Exhaust flue gas	5	900	[°C]	
D04	Delta of temperature variation of the exhaust flue gas temperature for automatic regulation of the Heating Fan (**P06**=2)	Exhaust flue gas	1	120	[°C]	
D05	Room temperature delta for automatic regulation of the heating power.		3	30	[°C]	
T69	Delay at the activation at the maximum speed of the Heating Fan if exhaust flue gas temperature > thermostat **Th07**		0	900	[s]	
T96	Changing heating power delay (used only if the power decreases)		0	900	[s]	

7.4 Thermostats Menu (TP04)

Code	Description	Probe	Min	Max	U	Def.
Th01	Off Stove	Exhaust flue gas	5	900	[°C]	
Th02	Igniter Deactivation	Exhaust flue gas	5	900	[°C]	
Th03	Pre-Extinguishing for lack of flame	Exhaust flue gas	5	900	[°C]	
Th06	From Stabilization to Variable phase	Exhaust flue gas	5	900	[°C]	
Th07	Modulation for Overtemperature Exhaust flue gas	Exhaust flue gas	5	900	[°C]	
Th08	Safety for Overtemperature Exhaust flue gas	Exhaust flue gas	5	900	[°C]	
Th09	Ignition Bypass	Exhaust flue gas	5	900	[°C]	

Th18	Antifreeze Thermostat	Boiler	5	10	[°C]	
Th19	Pump Activation Thermostat P1	Boiler	20	110	[°C]	
Th20	Sanitary Thermostat 1	Boiler	20	110	[°C]	
Th21	Sanitary Thermostat 2	Boiler	20	110	[°C]	
Th25	Boiler safety thermostat	Boiler	20	110	[°C]	
Th26	Minimum Range of the Boiler Thermostat	Boiler	20	110	[°C]	
Th27	Maximum Range of the Boiler Thermostat	Boiler	20	110	[°C]	
Th28	Stove Off in Standby	Exhaust flue gas	5	900	[°C]	
Th35**	Extinguishing Thermostat for Extinguishing Thermostat for 1	Exhaust flue gas	5	900	[°C]	
Th36**	Extinguishing Thermostat for Power 2	Exhaust flue gas	5	900	[°C]	
Th37**	Extinguishing Thermostat for Power 3	Exhaust flue gas	5	900	[°C]	
Th38**	Extinguishing Thermostat for Power 4	Exhaust flue gas	5	900	[°C]	
Th39**	Extinguishing Thermostat for Power 5	Exhaust flue gas	5	900	[°C]	
Th40**	Extinguishing Thermostat for Power 6	Exhaust flue gas	5	900	[°C]	
Th43**	Extinguishing Thermostat for Modulation	Exhaust flue gas	5	900	[°C]	
Th51	DHW/Buffer Probe minimum Thermostat	DHW/Buffer	20	110	[°C]	
Th52	DHW/Buffer Probe maximum Thermostat	DHW/Buffer	20	110	[°C]	
Th56	Output under Thermostat activation thermostat	Boiler	20	110	[°C]	
Th57	Boiler Probe – DHW/Buffer Probe Differential	Diff.	1	30	[°C]	
Th59	Pump P2 activation Thermostat (only if **P26**=4)	DHW/Buffer	20	110	[°C]	
Th78	Buffer safety thermostat	DHW/Buffer	20	110	[°C]	
Ih19	Pump P1 activation Thermostat Hysteresis	Boiler	1	20	[°C]	
Ih21	Sanitary Thermostat 2 Hysteresis	Boiler	1	20	[°C]	
Ih24	Boiler Thermostat Hysteresis	Boiler	1	20	[°C]	
Ih33	Room Thermostat Hysteresis	Room	0	10	[°C]	
Ih56	Hysteresis of the Thermostat for the control of the Thermostated Output	Boiler	1	20	[°C]	
Ih57	Differential Thermostat Hysteresis	Diff.	1	5	[°C]	
Ih58	Hysteresis of the DHW/Buffer Thermostat	DHW/Buffer	1	20	[°C]	
Ih59	Hysteresis of the Pump P2 activation Thermostat (only if **P26**=4)	DHW/Buffer	1	20	[°C]	
D01	Delta of increasing temperature of the exhaust flue gas temperature in Stabilization	Exhaust flue gas	0	100	[°C]	
D08	Water temperature delta for automatic combustion regulation	Boiler	1	30	[°C]	
D23	Delta to add to the Boiler Thermostat to switch from Modulation to Standby at the end of**T43** if **A13**=1	Boiler	0	50	[°C]	
D41	Ignition Delta	Exhaust flue gas	0	100	[°C]	
SP01	Minimum threshold of the water pressure in the boiler	S. Pressure	50	4000	[mbar]	
SP08	Maximum threshold of the water pressure in the boiler	S. Pressure	50	4000	[mbar]	

** Settings for each Combustion phase/power of the exhaust flue gas temperature. Below this Phase /Power, after the Pre-Extinguishing waiting time **T14**, the stove goes into Extinguishing for lack of flame. These values are in addition to the Thermostat control **Th03**.

7.5 Timer Menu (TP05)

Code	Description	Min	Max	U	Def.
T01	Duration time of Cleaning during Ignition	0	900	[s]	
T02	Duration of Igniter Pre-heating in Ignition	0	900	[s]	
T03	Duration Pre-load in Ignition	0	900	[s]	
T04	Duration Fixed Ignition in Ignition	0	3600	[s]	
T05	Duration Variable Ignition in Ignition	0	3600	[s]	
T06	Duration Stabilization in Ignition	0	900	[s]	
T07	Interval of Periodical Cleaning Repetition	5	600	[min]	

T08	Duration of Periodic Cleaning	0	900	[s]	
T09	Delay time for Safety AT1intervention	1	900	[s]	
T10	Delay time for Safety AT2intervention (pressure switch)	1	900	[s]	
T11	Delay time to go out of Standby	0	900	[s]	
T13	Minimum duration time of the Extinguishing Phase	0	900	[s]	
T14	Waiting time of Pre-Extinguishing for lack of flame	0	900	[s]	
T15	Waiting time in Safe Pre-extinguishing	0	900	[s]	
T16	Final Cleaning Duration	0	900	[s]	
T17	Delay of combustion power change	0	900	[s]	
T18	Delay of combustion power change outgoing Ignition	0	900	[s]	
T22	Delay time to go into Standby	0	900	[s]	
T23	Timer for fuel tank loading	0	3600	[s]	
T24	Duration signalling lack of fuel if an output has been set as Pellet Load Engine or control duration of fuel loading if there is no Pellet load Engine	0	3600	[s]	
T27	Delay for Deactivation Auger 2	1	900	[s]	
T29	Preload Waiting time in Ignition	0	900	[s]	
T32 *	Waiting time for brazier maintenance in Standby	1	500	[min]	
T33 *	Working time for brazier maintenance in Standby	0	900	[s]	
T34	Working time of the Auger if there is a backfire	0	3600	[s]	
T40	Auger Activation Delay	0	900	[s]	
T41	Pump P1 working time if **T42** expired	0	3600	[s]	
T42	Inactivity maximum time of the Pump P1 and of the Electrovalve	1	1500	[hours]	
T43	Timer to switch from Modulation to Standby if boiler temperature > (Boiler Thermostat+**D23**) and **A13**=1	0	3600	[s]	
T46	Working time of the 'Electrovalve' if **T42** expired	0	3600	[s]	
T57 *	Minimum duration of Standby phase	0	900	[s]	
T66	Hours of functioning of the system before it goes in Service Block	0	9999	[hours]	
T67	Functioning of the system before it displays the message "*Cleaning*"	0	9999	[hours]	
T68	Delay to restore the original Boiler Thermostat value in case of ceased sanitary water demand	0	900	[s]	
T84*	Working time before the system goes into automatic Extinguishing	1	9600	[min]	
T85	Maximum time for limit switch open	1	60	[s]	
T86	Cleaning Engine Work time	0	9600	[s]	
T87 *	Cleaning Engine Pause Time	1	900	[min]	
T88	Maximum time of power supply lack for the system to go back into the mode in which it was	10	900	[s]	
T89	Maximum time of power supply lack for the system to go back into Recover Ignition	1	1400	[min]	
T92	Door opening time before the system goes into Block	1	900	[s]	
T99	Return/End time of the Cleaning Engine cycle	0	9600	[s]	
T118	Duration of the extinguishing phase in Recover Ignition in case of Automatic Extinguishing ` function' if **A40**=2	1	900	[s]	
T141	Cleaning Engine work in Run Mode for Power 1	0	9600	[s]	
T142	Cleaning Engine work in Run Mode for Power 2	0	9600	[s]	
T143	Cleaning Engine work in Run Mode for Power 3	0	9600	[s]	
T144	Cleaning Engine work in Run Mode for Power 4	0	9600	[s]	
T145	Cleaning Engine work in Run Mode for Power 5	0	9600	[s]	
T146	Cleaning Engine work in Run Mode for Power 6	0	9600	[s]	
T147	Cleaning Engine work in Modulation	0	9600	[s]	
T148	Cleaning Engine work in Extinguishing, Recover Ignition and Standby	0	9600	[s]	
* it changes with the combustion recipes					

7.6 Settings Menu (TP08)

Setting of the general functions of the system.					
Code	**Description**	**Min**	**Max**	**U**	**Def.**
A01	Room Thermostat/Probe Management: 0=Ignition/Extinguishing; 1=Run Mode/Modulation; 2=Run Mode/Standby; 3= System Pump block until the thermostat **Th21** or **Th78** are reached (if **P26**=4);	0	5	[nr]	

	4=Run Mode/Standby and System Pump block until the thermostat **Th21** or **Th78** are reached (if **P26**=4); 5=Heating fan off or at power 1				
A10	Ignition Command from Extinguishing: 0=sends the system in recover ignition; 1=sends the system in Check Up	0	1	[nr]	
A13	System management if boiler temperature > Boiler Thermostat: 0=the system goes into Modulation; 1=the system first goes into Modulation and then, if boiler temperature > (Boiler Thermostat+**D23**), goes into Standby	0	1	[nr]	
A14	Pressure Sensor management: 0= disabled, 1=enabled	0	1	[nr]	
A26	Recover from Standby management: 0=immediate, 1=only on the expiry of the timer **T13** and if exhaust flue gas temperature <**Th28**	0	1	[nr]	
A27	Standby mode management: 0=the system carries out the brazier extinguishing; 1=the system carries out the brazier maintenance	0	1	[nr]	
A28	Auger Brake management: 0=not enabled; 1=enabled	0	1	[nr]	
A29	System Management in Standby for Room Thermostat and sanitary water demand: 0=remains in Standby; 1=exits from Standby	0	1	[nr]	
A40	Management of the 'Automatic Extinguishing Function'	0	2	[nr]	
A45	System in Standby on summer: 0=the System does not go into Standby if there is not sanitary water demand, is in Summer Mode and the selected hydraulic plant is the 0 or the 1; 1=the System goes into Standby if there is not sanitary water demand, is in Summer Mode and the selected hydraulic plant is the 0 or the 1	0	1	[nr]	
A48	Management of the key **P3** or **K5** of the control panel for Pellet Manual load: 0=enabled; 1=disabled	0	1	[nr]	
A52	Management of the Remote keyboard Room Thermostat: 0=Menu not enabled; 1=Run Mode/Modulation; 2=Run Mode/Standby; 3=pump block; 4=Run Mode/Standby and pump block	0	4	[nr]	
A53	Lack of main power supply management: 0=system into Block with **Er15** if there is a power failure for more than**T89** minutes; 1=system in Recover Ignition if there is a power failure for more than **T89** minutes	0	1	[nr]	
A61	Periodic Cleaning Management: 0=enabled only in Run Mode, 1=enabled even in modulation	0	1	[nr]	
A64	Management of Fan and Auger calibration: 0=disabled; 1=enabled; 2=enabled even in Ignition and Stabilization	0	1	[nr]	
P02	Maximum number of attempted Ignition	1	5	[nr]	
P03	Working Combustion Power Number	1	6	[nr]	
P04	Number of recipes that the user can see	1	4	[nr]	
P09	Pellet Level sensor Configuration: 0= N.C input sensor; 1**=** N.O input sensor.	0	1	[nr]	
P20	Pressure Sensor Selection	0	2	[nr]	
P26	Hydraulic Plant Configuration	0	6	[nr]	
P44	Output V2 Configuration	0	25	[nr]	
P49	Cleaning cycles of the Cleaning Engine working flat out	0	100	[nr]	
P50	Cleaning cycles of the Cleaning Engine in brazier extinguishing phase	0	100	[nr]	
P75	IN3 Input Configuration	0	29	[nr]	
P77	IN2 Input Configuration	0	29	[nr]	
P78	IN6 Input Configuration	0	29	[nr]	
P82	IN7 Input Configuration	0	29	[nr]	
P86	Management of the 'System Maintenance 1 function': 0=the system does not go into Block when exceeding **T66**, 1=the system goes into Block when exceeding **T66**	0	1	[nr]	
P100	Loading Engine Management in Night Mode: 0=normal functioning;; 1=Off	0	1	[nr]	
P103	Cleaning Engine Management in Night Mode: 0=normal functioning; 1=Off	0	1	[nr]	
* it changes with the combustion recipes					

7.7 COUNTERS MENU (TP11)

LCD and K100panels menu consists of 2 submenus, Counters and Error List, CP and K400 panels menu only of Counters Menu.

Counters		
Code		**Description**
LCD and K	*CP*	
Ignition	**Co04**	Number of attempted ignitions
Acc. Failed	**Co05**	Number of failed ignitions
Ore lavoro	**Co03**	Heating hours of the stove in Run Mode, Modulation and Safety 
Counter Reset	**rES**	Reset of all the counters: bring back all the counters to zero
Service Reset	**rSUC**	This menu allows you to reset the function 'System Maintenance 1 '
Using the parameter '*Management of Counters Reset menu view* ' present in the Settings menu of the software, you can enable the view of the Counters Reset menu (parameter set to 0), or disable it (parameter set to 1).		
Errors List The menu shows the last 10 occurred errors; in each line error code and date and time the error occurred are dsiplayed. To delete the list go into the Counters Reset menu.		

7.8 Output Test Menu (TP12)

Allows to test the functioning of each output with connected charges: it is available only in Off status.						
Code		**Description**	**Min**	**Max**	**U**	**Def.**
LCD and K	*CP*					
Combustion Fan	**To03**	Combustion Fan Test	0	230	[V]	
			300	2800	[RPM]	
Output V2	**To22**	V 2 Output Test	0	230	[V]	
			Off	On	-	
Pump	**To0**	Pump Output Test	Off	On	-	
Auger	**To01**	Auger Engine Test	Off	On	-	
			200	3000	[RPM]	
Igniter	**To04**	Igniter Output Test	Off	On	-	
During Fans test the set value[V]/[RPM] and the number of revolutions are show [RPM] detected by the encoder (if there is one) are shown: this allows to create the conversion table [RPM]/[V] to switch from Fan with encoder to fan without encoder if the encoder brakes. During the Auger with encoder test, the displays shows the set [RPM] value and the number of [RPM] revolutions detected by the encoder. If the Auger is without encoder the test will take place only ON/OFF						

7.9 Primary Air Regulator Menu (TP16)

Menu for the setting of the values of the combustion airflow regulator.					
Settings					
Code	**Description**	**Min**	**Max**	**U**	**Def.**
A24	Regulator management: 0=disabled, 1=Combustion fan regulation, 2=Combustion Fan+Auger regulation, 3=Auger regulation, 4=Auger+Combustion Fan regulation	0	4	[nr]	
A25	Regulation error management:: 0=the system do not do anything, 1=the system resets the regulator and a new regulation starts, 2=the system disables the regulator	0	2	[nr]	
A31	Failed regulation management: 0=the regulator always comes back to the first output, 1=the regulator stays on the las regulated output	0	1	[nr]	
T19	Stabilization time of the regulation on the first output	5	900	[s]	
T20	Stabilization Time of the regulation on the second output	10	900	[s]	
T80	Waiting time for the first regulation	0	900	[s]	
U60	Fan regulation Step	2	100	[V]	
		10	500	[RPM]	
C60	Auger regulation Step	0,11	20	[s]	
		10	500	[RPM]	
Flow Set					
Code	**Description**	**Min**	**Max**	**U**	**Def.**
FL20	Minimum Air for Check Up	0	2000		
FL22	Air Flow Set for Power 1	0	2000		
FL23	Air Flow Set for Power 2	0	2000		

FL24	Air Flow Set for Power 3	0	2000		
FL25	Air Flow Set for Power 4	0	2000		
FL26	Air Flow Set for Power 5	0	2000		
FL27	Air Flow Set for Power 6	0	2000		
FL30	Air Flow Set for Modulation	0	2000		
FL40	Maximum Flow	0	2000		
Delta					
Code	**Description**	**Min**	**Max**	**U**	**Def.**
FL52	Delta Variation Air Flow Set for Power 1	0	100	[%]	
FL53	Delta Variation Air Flow Set for Power 2	0	100	[%]	
FL54	Delta Variation Air Flow Set for Power 3	0	100	[%]	
FL55	Delta Variation Air Flow Set for Power 4	0	100	[%]	
FL56	Delta Variation Air Flow Set for Power 5	0	100	[%]	
FL57	Delta Variation Air Flow Set for Power 6	0	100	[%]	
FL60	Delta Variation Air Flow Set for Modulation	0	100	[%]	

7.10 Combustion Fan2 Menu (TP25)

Menu for the setting of the values of the second Exhaust flue gas Fan.

Code	Description	Min	Max	U	Def.
VA01*	Ignition Speed	0	230	[V]	
VA02*	Stabilization Speed	0	230	[V]	
VA03*	Power Speed 1	0	230	[V]	
VA04*	Power Speed 2	0	230	[V]	
VA05*	Power Speed 3	0	230	[V]	
VA06*	Power Speed 4	0	230	[V]	
VA07*	Power Speed 5	0	230	[V]	
VA08*	Power Speed 6	0	230	[V]	
VA09*	Speed in Extinguishing	0	230	[V]	
VA10*	Speed in Second Ignition	0	230	[V]	
VA11*	Speed in Modulation	0	230	[V]	
VA12*	Speed in Standby	0	230	[V]	
VA22	Speed with Door open	0	230	[V]	
VA24*	Speed in Ignition-Preheating	0	230	[V]	

* it changes with the combustion recipes

7.11 Menu to Restore Default Values (TP26)

This menu allows you to restore the factory set values of the parameters used by the system.
To use it, in the software, the restore Default values management parameter have to be set '*to 1*'.