FW Revision	Revision Date	Description	
3.7	18/03/2022	• Management change of the Auger Regulation by the Primary Air Controller	6.4.9
3.6	23/12/2021	• On-Off Pump Operation	6.14.5
	23/07/2021	• The operation of the Primary Air Regulator has been modified	
	11/05/2021	• Primary Air Regulator Management has been added in Ignition and Stabilization	
	20/04/2021	• Management of DAC/PWM outputs has been added. LCD100 and LCD100 touch panels will no more be updated since the current firmware revision of the control board (3.0).	
	24/02/2021	• The parameter A99 has been added for the management of the ignition *Step* of the Igniter on a Triac output	
	11/11/2020	• TriKey and 2Ways2+ management has been added • The operation of the Pellet Level Sensor has been modified	
	23/09/2020	• Flow switch input logic inversion has been inserted	
	12/05/2020	• Soft Mode function has been modified • The label has been modified in Modulation for exhaust flue gas temperature • Parameter P08 (Recipe) has been added to System Menu	
	18/12/2019	• Secondary Information have been modified	
	12/11/2019	• Soft Mode function has been added • Auger 2 pause-work has been added • Cleaning motor 4 has been added • Periodic Cleaning for recipe has been added • Auger feeding at the end of the extinguishing has been added • Keyboards K500 management has been added	
	18/07/2019	• Refill Function has been added • Minimum Flow Function Added	
	20/05/2019	• Language set 3 has been added	
	06/02/2019	• Language set 2 has been added	
	24/01/2019	• Hydraulic Plants 1, 3, 4, 6 have been added • Night Mode	

Contents

NG01 is a control system for Pellet Stoves, available in the versions Air and Hydro.
It stands out for:

- Easy installation and use
- Simplified and intuitive user functions
- Effective and suitable system software based on TiEmme elettronica technology
- Advanced functions for the manufacturer to adapt to the different types of stoves and installations

Composition of the Product:

- Electronic board equipped for a safe and solid 4-points fastening
- Extractable connectors kit
- Exhaust flue gas temperature probe
- Room probe
- Board-keyboard connecting wire
- Control keyboard with antistatic cover

Safety Standards

Before installation, follow

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

Conformity Declaration

Applied rules: EN 60730-1 50081-1 EN 60730-1 A1 50081-2

This manual has been produced with care and attention, however the information could be incomplete, not comprehensive or contain mistakes. For this reason design, specifications and contents could be modified without notice depending on the model produced.

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

TiEmme elettronica 06055 Marsciano (PG) Italy
Tel. +39.075.874.3905; Fax. +39.075.874.2239 info@tiemmeelettronica.it

1 Firmware code and languages

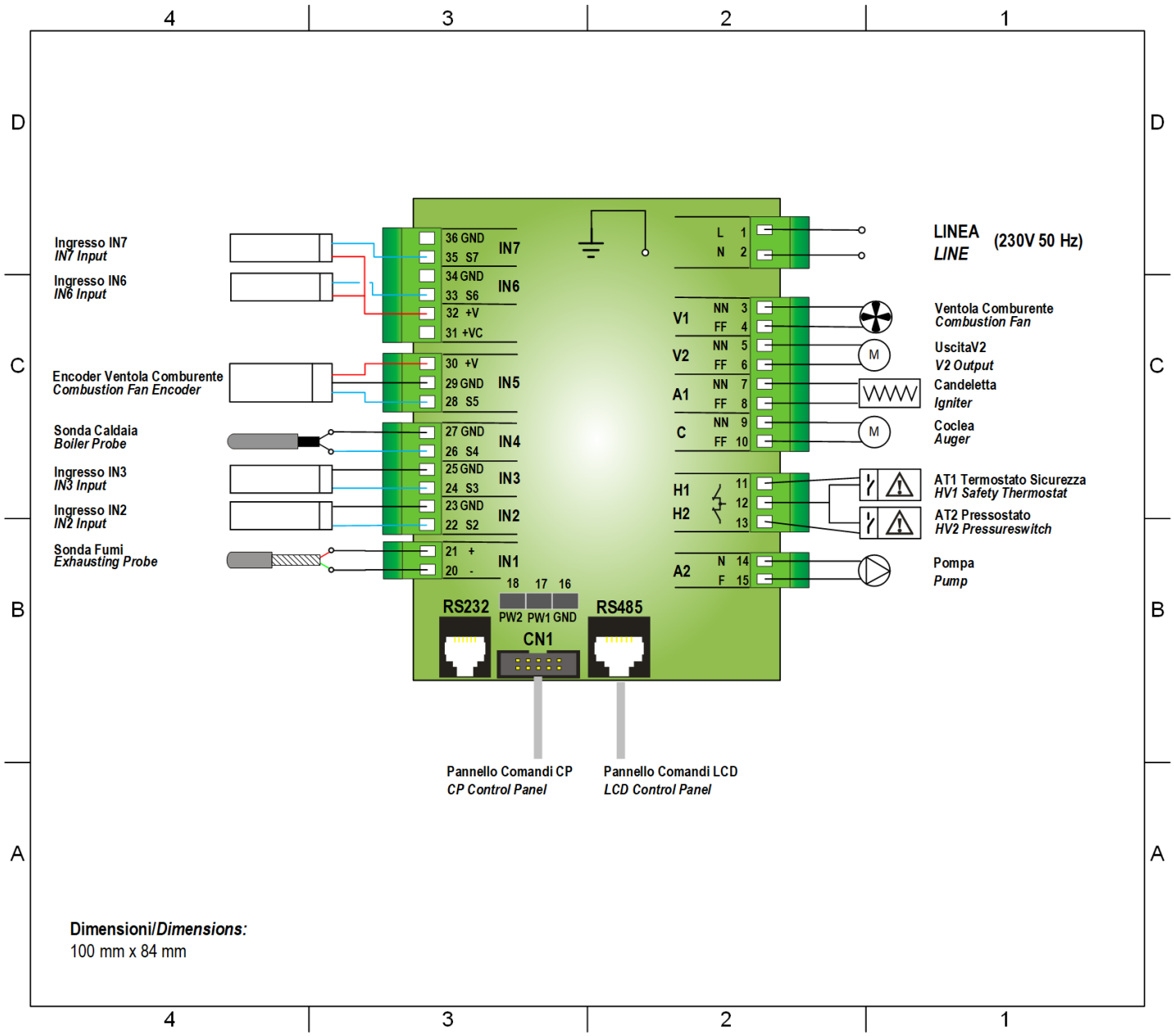
Firmware Codes			
Control Board			
NG01	FSYSR02000002		
K series Panels			
K100	FSYSF04000035		
K400	FSYSF13000017 FSYSF33000010		
K500M	FSYSF25000005		
K500T	FSYSF27000005 until revision 1.1 (06/12/2021) FSYSF27000015 starting by revision 2.0 (07/12/2021)		
LCD panels	*Set 1*	*Set 2*	*Set 3*
LCD100 Touch	FSYSF03000098	FSYSF03000102	FSYSF03000105
LCD100	FSYSF01000309	FSYSF01000313	FSYSF01000316
LCD series panels are no longer updated by the 3.0 control board firmware revision (20/04/2021).			
***WiKey* keyboard**			
WiKey	FSYSF29000001		
Radio control			
2Ways2+/Monolite	FSYSC03000006		
TriK	FSYSF30000001		
Communication Module			
PinKey	FSYSS01000001		

Languages			
K series panels and 2Ways2+/Monolite Remote control			
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 panels		
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	Slovakian	
Croatian	Russian	
Slovenian	Bulgarian	

2 INSTALLATION

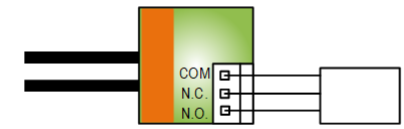
2.1 ELECTRICAL WIRINGS



Dimensioni/*Dimensions:*
100 mm x 84 mm

Module Connection ACR1 and ACR2

ACR1 and ACR2 modules switch one or two Triac outputs in exchanging relays outputs. In case you need to supply the used charged, follow **diagram 2** for connections , otherwise **diagram 1.**



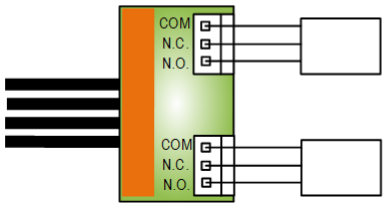
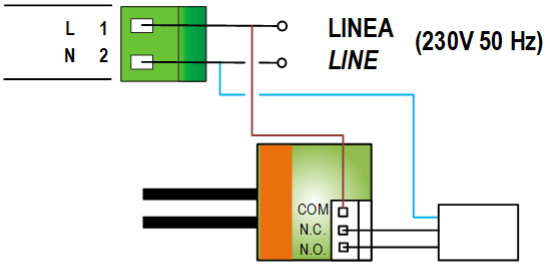


Diagram 1



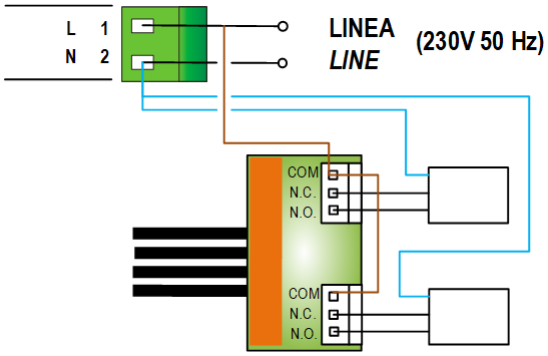


Diagram 2

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 Regulation 1,6 A max
8	**FF**		
9	**NN**	Pellet Auger Motor	Triac Regulation 0,9 A max
10	**FF**		
11		AT1 Input Safety Thermostat	ON/OFF contact usually OFF Short-circuit if not used
12			
12		AT2 Input Safety Pressure switch	ON/OFF contact usually OFF Short-circuit if not used
13			
14	**N**	Pump	Relay 3 A max
15	**F**		
16 *	**GND**	PWM1/DAC1 configurable output (configuration parameters: **P140** and **P142**)	Signal 0-10 V, 10 mA, 1 KHz frequency
17 *	**PW1**		
16 *	**GND**	PWM2/DAC2 configurable output (configuration parameters: **P141** and **P143**)	Signal 0-10 V, 10 mA, 1 KHz frequency
18 *	**PW2**		
20	Green —	Exhaust flue gas Probe	Thermocouple K: 500 or 1200 °C Max
21	Red **+**		
22	**SEG**	Configurable IN2 input (configuration parameter: **P77**)	Configurable analogue input (NTC 10K probe) / digital
23	**GND**		
24	**SEG**	Configurable IN3 input (configuration parameter: **P75**)	Configurable analogue input (NTC 10K probe) / digital
25	**GND**		
26		Buffer Tank Probe	NTC 10K @25 °C: 120 °C Max
27			
28	**SEG**	Combustion Fan Encoder Sensor	TTL 0 / 5 V Signal
29	**GND**		
30	**+V**		
31	**+Vc**	+10÷14 Volts	-
32	**+V**	+5 Volts	-
33	**SEG**	IN6 Configurable input (configuration parameter: **P78**)	Analogue Input / digital
34	**GND**		
35	**SEG**	Configurable IN7 input (configuration parameter: **P82**)	Analogue Input / digital
36	**GND**		
RS232		RS232 Connector	Programmer, KeyPro, Modem, PC Link
RS485		RS485 Connector	Connection to LCD keyboard, 4Heat
CN1		Flat Cable	CP keyboard link

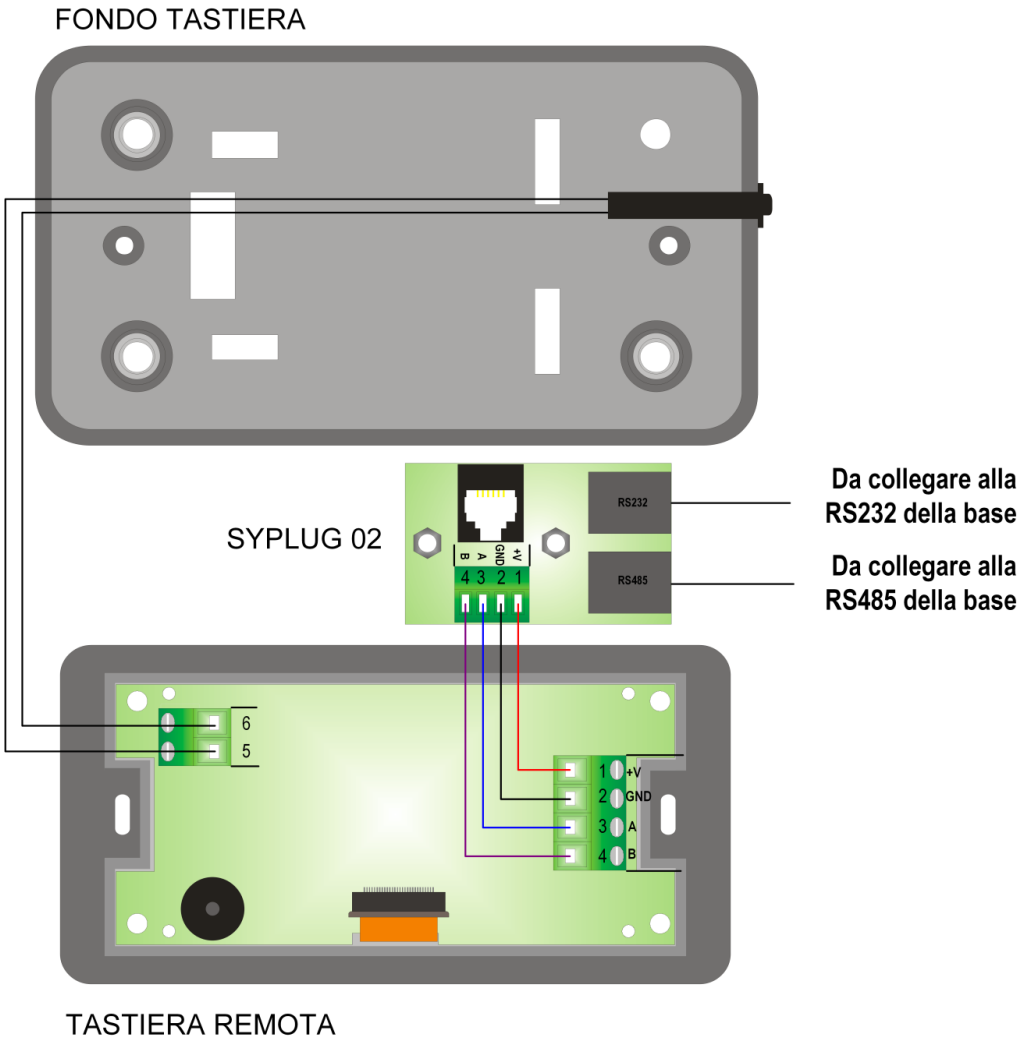
*** Only available on boards whose hardware includes PWM output.**

2.2 LCD AND K PANELS CONNECTIONS

LCD and K panels use the RS485 protocol for the connection with the control board; this allows high distance connections to happen, with an excellent interference immunity, as long as the protocol standards are fulfilled.
It is therefore recommended to use twisted and shielded wires for the connection.

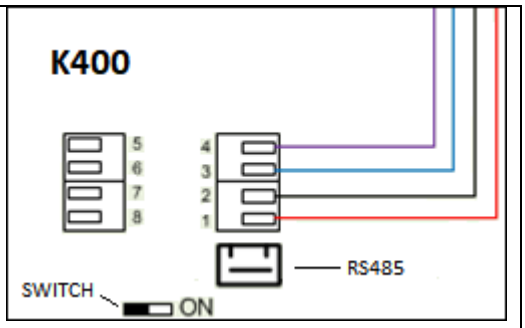
Remote Keyboard
The Remote Keyboard allows remote control of the system. Its functionality is similar to the Local keyboard; the sensor on the board is inserted for detecting the room temperature and the displayed temperature is sensed by the sensor.

Connections
The wiring diagram below shows how to connect the Remote Keyboard to the SYPlug02, which takes the RS232 and RS485 connectors of the control board out of the stove/boiler.



2.3 RS485 LINE TERMINATION

Use a line termination resistor, if more than one RS485 device is connected to the board.
In order to do this, move to ON only the device-switch with the longest connection cable.



2.4 TRIKEY

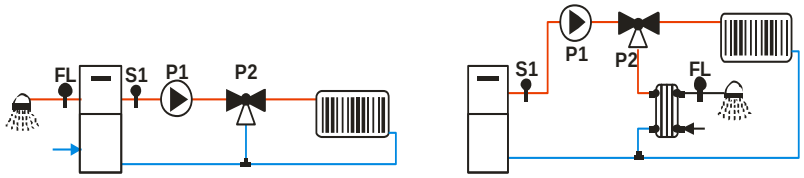
The system can handle the use of radio thermostats, called TriKey. It must be placed in the room, instead of the local or remote probe or the radio control 2Ways2 or 2Ways2+. For a correct use and configuration of the TriKey please check the dedicated manual. The TriKey works at a frequency of 868,3MHz and for the communication with the board it will be necessary to use a WiKey keyboard or a PinKey module.

2.5 FIRST CONFIGURATION

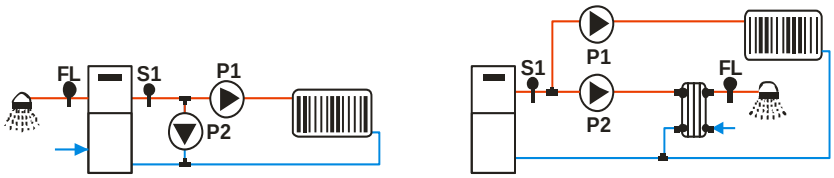
First, you should select the hydraulic plant via parameter **P26** in the Settings menu inside the System Menu and then go on setting the parameters of the configurable output V2 (parameter **P44**) and inputs. Finally set **P25** to select the type of combustion fan (with or without encoder) and **P81** to select the type of Auger (with or without encoder). Set also parameters **P111** and **P112** to use the Refill function.

Selectable plants (for further information see paragraph 6.12):

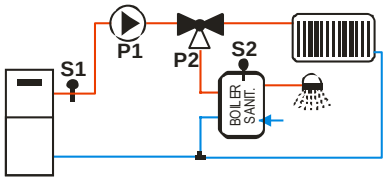
Configuration 0 (**P26** = 0)



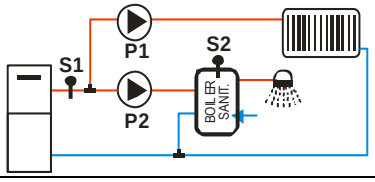
Configuration 1 (**P26** = 1)



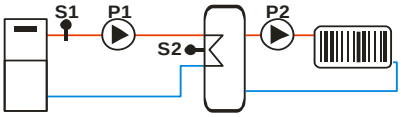
Configuration 2 (**P26** = 2)



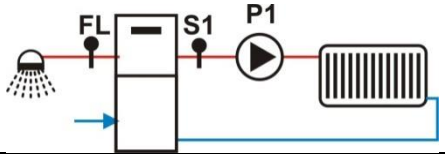
Configuration 3 (**P26** = 3)



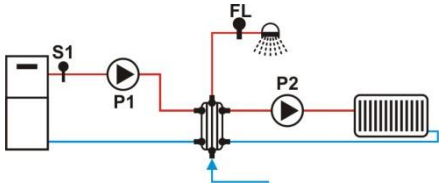
Configuration 4 (**P26** = 4)



Configuration 5 (**P26** = 5)



Configuration 6 (**P26** = 6)



Configurable Outputs (for more details see paragraph 6.5):

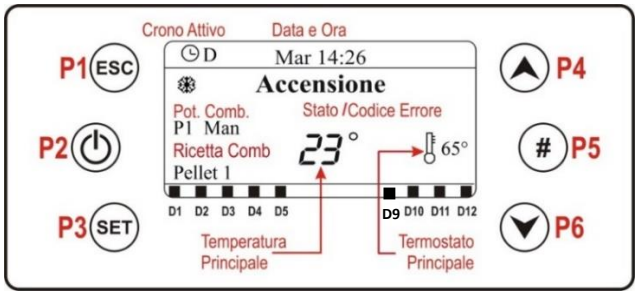
Connectable Devices	*Parameter Value*	*V2 Output (**P44**)*
Disabled output	0	√
Pellet Safety Valve	1	√
Loading Motor	2	√
Output under thermostat	3	√
Combustion Fan 2	5	√
Heating Fan	6	√
Air Valve	7	√
Error Report	11	√
Electro valve/ P2 Pump	15	√

Auger 2 (work-pause)	16	√			
Auger 2 (always on)	17	√			
Cleaning Motor	25	√			
Cleaning Motor 4	32	√			
Auger voltage supply in PWM or DAC	44	√			
PWM Configurable Outputs					
Connectable Devices	*Parameter Value*	*PW1 Output (**P142**)*		*PW2 Output (**P143**)*	
Disabled output	0	√		√	
Auger	2	√		√	
Combustion Fan	3	√		√	
Heating Fan	4	√		√	
Configurable Inputs (for more information see the paragraph 6.4):					
Connectable Devices	*Parameter Value*	*Input*			
		*IN2 (**P77**)*	*IN3 (**P75**)*	*IN6 (**P78**)*	*IN7 (**P82**)*
Not-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 Motor limit switch	12	√	√	√	√
Room Probe	15	√	√	—	—
Primary Air regulator	16	—	—	√	√
External Chrono	17	√	√	√	√
Auger Encoder Input	28	√	—	—	—
Water Pressure Sensor	29	—	—	√	√

3 Control Panel

3.1 LCD 100 panels

The main frame shows:
time and date, Chrono activation, combustion power, heating power, operating state, error code, main temperature, main thermostat,

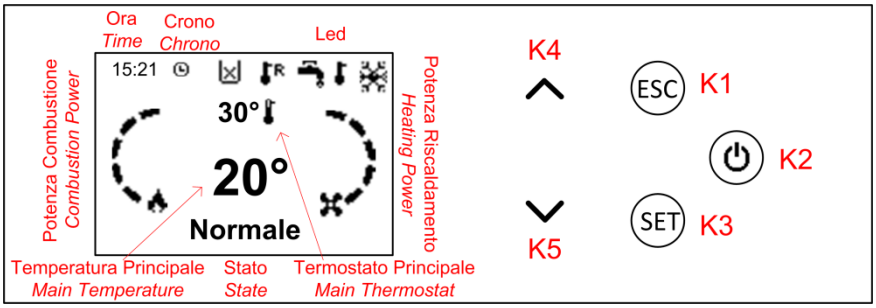


Key	Function		
P1	Exit Menu/Submenu		
P2	Ignition/Extinguishing (push for 3 sec.), Errors Reset (push for 3 sec.), Enable/disable Chrono		
P3	Access to User Menu 1/submenu, Access to User Menu 2 (push for 3 sec.), Save data		
P4	Access to Visualizations Menu, Increase		
P5	Enable Chrono time slot		
P6	Access to Visualizations Menu, Decrease		
Led	**Function**	**Led**	**Function**
D1	Igniter ON	**D9**	Auger On
D2	Auger Motor ON	**D10**	Lack of material in the tank
D3	Pump ON	**D11**	Room Thermostat/Remote Keyboard room thermostat reached
D4	V2 ON Output	**D12**	Domestic Hot Water Demand

3.2 K100 and K400 panels

3.2.1 K100

The main frame shows:
Time and date, Chrono activation, combustion power, heating power, operating state, main temperature, main thermostat,



Key	Function		
P1	Exit Menu/Submenu		
P2	Ignition/Extinguishing (push for 3 sec.), Errors Reset (push for 3 sec.), Enable/disable Chrono		
P3	Access to User Menu 1/submenu, Access to User Menu 2 (push for 3 sec.), Save data		
P4	Access to Visualizations Menu, Increase		
P5	Access to Visualizations Menu, Decrease		
Led	**Function**	**Led**	**Function**
	Room Thermostat/Remote Keyboard room thermostat reached	1	External Chrono reached
	WINTER		SUMMER
	Domestic Hot Water Demand		

3.2.2 K400

Home Page 1

Date and time, local room temperature in use, local room thermostat in use, errors report tool

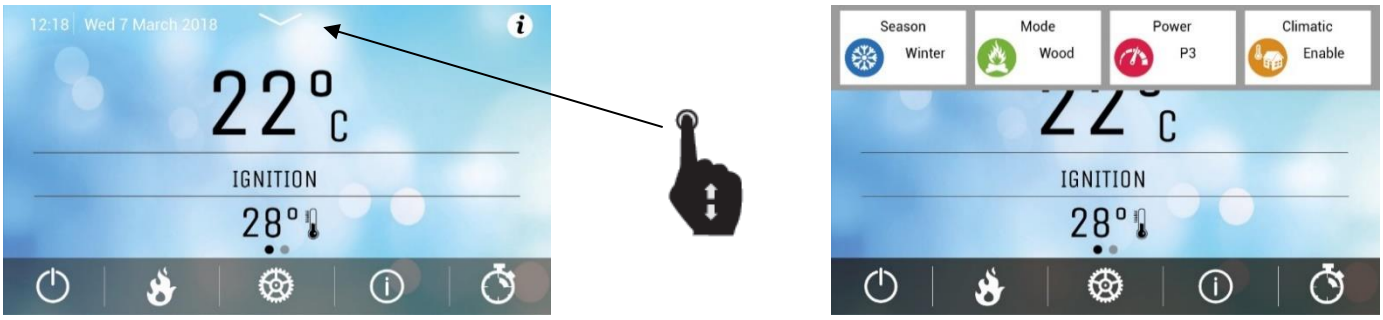
HOMEPAGE 1/2

Selection keys

	System Ignition and unlock 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 on the top side of the display allows you to access to the special leds quick toolbar. Here you can view the following ones:



	Set combustion power		Chrono function state		WINTER
	SUMMER				

Home Page 2

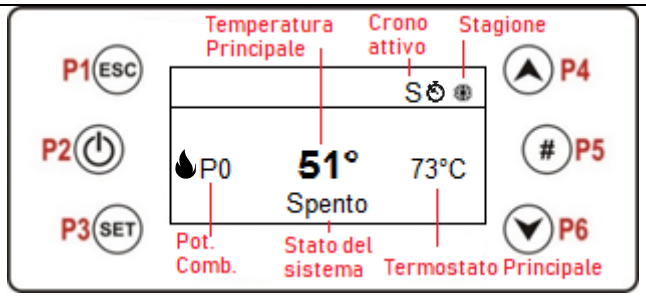
System Operation Leds

HOMEPAGE 2/2

System Operation Leds

	Auger On		V2 Output On		Room Thermostat/ Remote keyboard Room Thermostat reached
	Igniter On		External Chrono reached		DHW demand
	Pump On		Lack of fuel in the tank		

3.3 K500 Panels

Home Page	
Date and time, Chrono state, local room temperature in use, local room thermostat in use, errors report, combustion power	 Image for demonstration only

Selection keys			
P1	Exit from menu/submenu Refill Function (push for 3 seconds)	*P4*	Access to combustion power Menu Increase
P2	Ignition, extinguishing and errors reset (push for 3 seconds) Enable/Disable Chrono	*P5*	Enable Chrono time slot Access to the Info Menu
P3	Access to User Menu 1/ submenu Access to user 2 menu (push for 3 seconds) Save Data	*P6*	Access to Room Thermostat / Boiler Thermostat Menu Decrease
P3+P5 (push for 3 seconds)	Direct access to the Secondary Information menu inside the Service menu.		

Led			
D W WE	Daily Chrono on Weekly Chrono on Week End Chrono On		DHW demand or buffer tank thermostat not satisfied
			Local room heating target reached
	Lack of fuel in the tank/Material level in the tank within 0% and 15%		Level of the material in the tank within 15% and 35%
	Level of the material in the tank within 35% and 60%		Level of the material in the tank within 60% and 80%
	Level of the material in the tank within 80% and 100%		
	SUMMER		WINTER

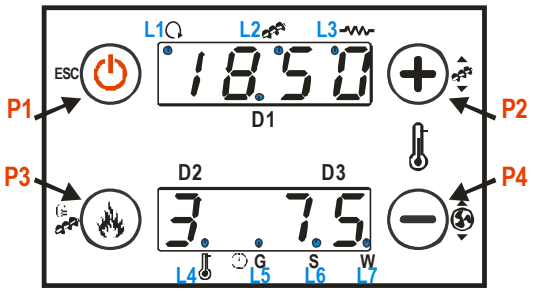
3.4 Operating states visualization

State	Display
Modulation for exhaust flue gas temperature	Run Mode M
Modulation for other conditions	Modulation
Other States	The name of the state is displayed

3.5 CP Panels

3.5.1 CP110 / CP115

Values shown in the homepage:
D1 ***Display***: time, operational state, errors, menu, submenu, parameters' values
D2 ***Display***: power, value code
D3 ***Display***: recipe
D4 ***Display***: main temperature, value code

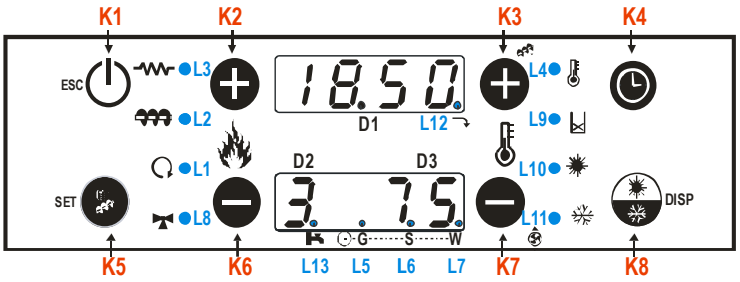


Key	Function	
	Click	**Long press**
P1	Views / Menu Exit	Ignition/ Extinguishing / Block Reset
P2	Thermostat (+) / data increase	Pellet loading correction
P3	Modify combustion power / Data Backup	Manual pellet loading

P4	Edit thermostat (-) / Data decrease		Exhaust flue gas Fan Correction		
Led		Function	Led		Function
L1		Led On: Pump On	L5	D	Led On: Daily program
L2		Led On: Auger in the ON range	L6	W	Led On: Weekly program
L3		Led On: Igniter On	L7	W	Led On: Weekend program
L4		Led On: Room Thermostat temperature/remote keyboard Room Thermostat temperature reached			

3.5.2 CP120

Values shown in the homepage:
D1 ***Display***: time, operational state, errors, menu, submenu, parameters' values
D2 ***Display***: power, value code
Display ***D3***: recipe
D4 ***Display***: main temperature, value code



Keys	Function	
	Click	Long press
K1	Exit menu	Ignition/ Extinguishing / Block Reset
K2	Edit combustion power (+)	-
K3	Thermostat (+) / data increase	Pellet loading correction
K4	-	Enable Chrono time slot
K5	Access to User Menu 2 / Data backup	Manual pellet loading
K6	Combustion power modification (-)	-
K7	Edit thermostat (-) / Data decrease	Exhaust flue gas Fan Correction
K8	Visualization	Summer/Winter mode selection

Led			Function	Led		Function
L1			Led On: Pump On	L8		Led On: Valve On
L2			Led On: Auger in the ON range	L9		Led On: lack of material in the tank
L3			Led On: Igniter On	L10		Led On: Summer Mode selected
L4			Led On: Room Thermostat temperature/remote keyboard Room Thermostat temperature reached	L11		Led On: Winter Mode selected
L5		D	Led On: Daily program	L12		Led On: Pellet Loading Motor On
L6		W	Led On: Weekly program	L13		Led On: Domestic Hot Water Demand
L7		W	Led On: Weekend program			

3.5.3 View operating state

State	Code	State	Code	State	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- Preloading Phase	On 2	Modulation for: – Exhaust flue gas temperature – Other conditions	runM Mod	Recovery Ignition	rEc
Ignition-Fixed Phase	On 3	Standby	Stby		

3.6 Alarms

With any error the system goes into Block		
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 over temperature	**Er04**	**Er04**
Extinguishing for exhaust flue gas over temperature	**Er05**	**Er05**
Pellet Thermostat open (backdraft in the brazier)	**Er06**	**Er06**
Combustion Fan Encoder: lack of Encoder signal (if **P25 = 1** or **2**)	**Er07**	**Er07**
Combustion Fan Encoder: failed speed regulation (if **P25 = 1** or **2**)	**Er08**	**Er08**
Low water pressure (the error is not reported if the system is in Off or Block state and P1 Pump is Off)	**Er09**	**Er09**
Water over pressure	**Er10**	**Er10**
Date/Time values are not correct due to a continuous lack of voltage power supply	**Er11**	**Er11**
Failed Ignition	**Er12**	**Er12**
Lack of voltage	**Er15**	**Er15**
Communication Error RS485	**Er16**	**Er16**
Failed Air Regulation	**Er17**	**Er17**
Lack of fuel	**Er18**	**Er18**
Boiler Probe or DHW/Buffer tank Probe open	**Er23**	**Er23**
Cleaning Motor broken	**Er25**	**Er25**
Flow meter broken	**Er39**	**Er39**
Min air flow in Check Up (**FL20**) or in Run mode and Modulation (**FL19**) not reached	**Er41**	**Er41**
Max 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: failed speed regulation (if **P81** = **1** or **2**)	**Er48**	**Er48**
Service Error. It reports the achievement of the planned operation hours in the 'Maintenance 1' function (parameter **T66**). It is necessary to call for service.	**Service Er40**	**SErU**

3.7 MESSAGES

Description	Code	
	LCD and K	*CP*
Anomaly in the probes checking during Check Up phase.	**Probe**	**Probe**
Water temperature in the boiler higher than 99 °C		**Hi**
It notifies that the planned hours of functioning have been reached (parameter **T67**).	**Cleaning**	**CLr**
The door is open	**Door**	**Door**
Lack of fuel in the tank	**Refill**	**rFiL**
Soft Mode function on	**Soft Mode**	**SoFt**
The message appears if the system is turned off during Ignition (after Preloading) by an external device: the system will stop only when it is fully operational	**Ignition block**	**OFF dEL**
Lack of communication between the LCD panel and control board	**Connection error**	**-**
Periodic Cleaning in progress	**Cleaning on**	**PCLr**
System in Night Mode	**Night Mode**	**NiGH**
The message is displayed when there is a domestic hot water demand (flow switch contact closed). It appears only on hydraulic systems in which the use of a Flow Switch is provided.	**-**	**FLu**

3.8 VISUALIZATION

Display		Unit	Description
LCD and K	*CP*		
Exhaust Flue Gas T.	**tF**	[°C]	Exhaust flue gas temperature
Boiler T	**-**	[°C]	Boiler Temperature
Room T.	**tA**	[°C]	Room Temperature; it is displayed if an input has been set as Room Probe or if the radio control 2Ways2+ has been enabled or if a TriKey is included.
DHW T:	**tP**	[°C]	DHWTemperature; it is displayed if an input has been set as DHW Probe/Buffer tank and a hydraulic system with DHW Buffer tank has been selected
Buffer tank T.	**tP**	[°C]	Buffer tank Temperature; it is displayed if an input has been set as DHW Probe/Buffer tank and a hydraulic plant with Buffer tank has been selected.
Air Flow *	**FL**	-	Airflow; 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]	Auger ON time; it is displayed if **P81** is equal to 0
Recipe	**-**	[nr]	Combustion recipe selected; it is shown only if **P04** is higher than 1
Water Pressure	**PA**	[mbar]	Water Pressure; it is displayed if an input has been set as water Pressure Sensor

Service	**St**	[h]	Remaining time before the system notices the message '*Service*'; it is shown if **T66** is higher than 0.
Cleaning	**St2**	[h]	Remaining time before the stove cleaning is performed; it is shown if **T67** is higher than 0.
Pellet	**PL**	[%]	Amount of remaining pellet in the tank
Working hours*	**-**	[h]	Working hours of the stove in Run Mode, Modulation and Safety
Ignitions *	**-**	[nr]	Number of attempted ignitions
-	**nGHt**	-	Night Mode Function State
-	**FUnC**	-	Summer (*ESt*)/Winter (*InU*) Mode
-	**FC**	-	Firmware Code and Revision: FYSr02000002.x.y
Prod. Code 562-xyzt *			Product code

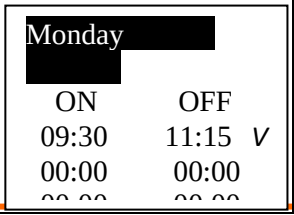
* Not available on K500 keyboards

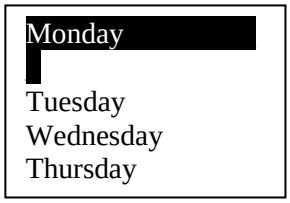
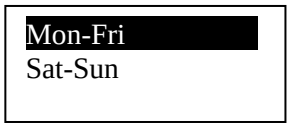
4 Menu

4.1 Menu for LCD 100, K100 and K400 panels

4.1.1 User menu 1

Power	**Combustion** By entering this menu you can modify the combustion power of the system. It is possible to set it in automatic or manual mode: in the first case the system selects the combustion power, in the second case the user selects the desired power.
	Heating By entering this menu you can modify the heating power. It is possible to set it in automatic or manual mode: in the first case the system selects the combustion power, in the second case the user selects the desired power. If no output has been set as Heating Fan or if you set the parameter **A04** = 1 the menu is not displayed.
Thermostats	**Boiler** Menu to change the value of the Boiler Thermostat. The minimum and the maximum value can be programmed by setting the related Thermostats **Th26** and **Th27**.
	Local Room This menu allows you to modify the value of the Room Thermostat. It is displayed only if an input has been set as Room Probe or if the radio control 2Ways2+ has been enables or if a TriKey is included.
	DHW This menu allows you to modify the DHW Thermostat. It is displayed if an input has been set as DHW/Buffer tank Probe and a hydraulic system including a DHW Buffer tank has been selected.
	Buffer Tank This menu allows you to modify the value of the Buffer tank Thermostat. It is displayed if an input has been set as DHW/Buffer tank Probe and a hydraulic plant including a Buffer tank has been selected.
Recipe	This Menu allows the selection of the Combustion Recipe; if you set the parameter **P04** = 1 the menu is not displayed.
Chrono	It allows you to program and able the Ignitions/Extinguishings of the system. It is formed by 2 submenus.
	Mode It allows you to select the mode of your choice, or to disable all the schedules. • Enter in edit mode by clicking **P3** • Select the mode (Daily, Weekly or Weekend) • Enable/disable the Chrono mode by clicking **P2** • Save the new settings with the key **P3** **Program** The system includes three type of programming: Daily, Weekly, Weekend. After selecting the program of your choice: • Select the programmed time clicking **P6** or **P4** (**P5** or **P4** for K100)



	• Enter the edit mode (the selected time blinks) with the button **P3** • Edit the times clicking **P6** or **P4** (**P5** or**P4** for K100) • Save the new settings with the button **P3** • Enable (a "V" is displayed) or disable the time slot (a "V" is not displayed) pushing the key **P5** (**P2** per la K100) *Daily* Select the day of the week of your choice and set the ignition and extinguishing times. *Program across midnight* Set the ON time of the previous day to the value of your choice: Ex. 20.30 Set the OFF time of the previous day to 23:59 Set the ON time of the following day at 00:00 Set the OFF time of the following day to the value you prefer: Ex. 6:30 The system will turn on Tuesdays at 20.30 p.m. and will be extinguished on Wednesdays at 6.30 a.m. *Weekly* The programs are the same for all the days of the week. *Weekend* Choice between the slot Monday-Friday and Saturday-Sunday and set the Ignition and Extinguishing times.	 
Refill	This Menu allows you to calculate the used fuel and the amount of remaining pellet in the tank. You have 4 charge levels: 100% (full tank), 75%, 50%, 25%, and 0 (disabled function). For a correct functioning the manufacturer has to set the parameters **P111** and **P112**.	
Soft Mode	Menu to switch on and off the Soft Mode. The menu is displayed if at least one of the parameters **P61**, **P62**, **P63**, **P64, P65,** and **P66** is set to a value different from zero.	
Loading	The procedure activates the manual pellet loading and will stop automatically after 300 seconds. The system must be in Off for the function can be activated. Only for local control panel.	
Loading Test	Use this procedure to set the value of the parameter **P112** of the ***Refill*** function. The procedure allows you to calculate the amount of pellet used in 10 minutes with the auger value of **P05**/2. The system must be into Off to carry out the measurement.	
Remote Keyboard (only for remote control panel; it is displayed if **A52** > 0)	**Activation Thermostat** It allows switching on/off the Room Thermostat functioning.	
	Room Thermostat Menu to modify the remote keyboard Room Thermostat value	

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 included *ON:* SYTX4 radio control is being used.
	Cleaning Reset Menu to reset the function 'System Maintenance 2'. It is displayed if **T67** > 0.
	Auger Calibration It allows you to modify the default set values of the Auger's speed or On times. The values can be set within the range –7÷7. The default value is 0. The menu is displayed only if **A64** = 1. Only for local control panel.
	Fan Calibration It allows you to modify the default set values of the Combustion Fan's speed. The values can be set within the range –7÷7. The default value is 0. The menu is displayed only if **A64** = 1. Only for local control panel.
	Summer-Winter Menu to edit the functioning of the hydraulic system according to the season.
	Automatic Power

	This menu allows you to set combustion power in automatic mode only. Once it is set, power change menus are no longer displayed.
	Night Mode Menu to set and enable the time slot to start and end of the Night Mode. The time slots programming is similar to the one described in the Chrono Menu. For the programming across the midnight, set a time slot end to 23.59 and the following from 00.00 to a value of your choice. Night Mode allows you to disable the set time slots, the functioning of the following motors: Loading Motor (if **P100** = 1), Cleaning Motor (if **P103** = 1). During the programmed times, the display shows *the Night Mode* message. The menu is displayed only if at least one motor is disabled in Night Mode.
Display Menu	**Brightness *** It allows you to adjust the screen brightness
	Contrast ** It allows you to adjust the screen contrast
	Minimum Light It allows you to adjust the screen brightness when not using the controls
	Keyboard Address Menu protected by password (*default password is 1810*), that allows you to set the node RS485 address. It is not possible to have more nodes with the same address within bus 485.
	Sound * It allows you to enable or disable the sound from the control panel
	Nodes List This Menu allows you to see the communication address of the control board, type of control board and firmware version. The board types can be: *MSTR* Master *INP* Inputs *KEYB* Keyboard *OUT* Outputs *CMPS* Composite *SENS* Sensors *COM* Communication
	Audible Alarm ** Menu to enable/disable the acoustic alarm
	Wallpaper * It allows you to change the control panel wallpapers
System Menu	Menu to enter into technical menu. The access is protected by a password (*default password: 0000*).

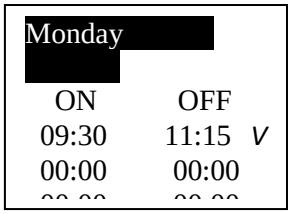
***** Only for K400 control panel ****** only for LCD panels

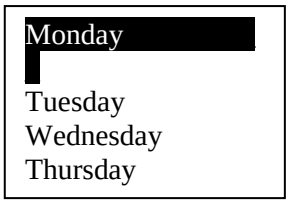
4.2 Menu for K500 panels

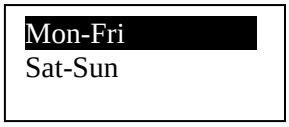
4.2.1 User menu 1

Power	**Pellet** This Menu allows you to modify the system combustion power in Pellet mode. It can be set in automatic or manual mode: in the first case the system will choose the combustion power; in the second case the user selects the power. On the left side of the display the combustion modality (*A*=automatic, *M*=manual) and the working power of the system are reported.
	Heating In this menu is possible to modify the heating power. It can be set in automatic or manual mode: in the first case the system will choose the combustion power; in the second case the user selects the power. On the left side of the display the heating modality (*A* = automatic, *M* = manual) and the corresponding power are reported. If no output has been set as Heating Fan or if you set the parameter **A04** = 1 the menu is not displayed.
Thermostats	**Boiler** Menu to change the value of the Boiler Thermostat. The minimum and the maximum value can be programmed by setting the related Thermostats **Th26** and **Th27**.
	Buffer Tank This menu allows you to modify the value of the Buffer tank Thermostat. It is displayed if an input has been set as DHW/Buffer tank Probe and a hydraulic plant including a Buffer tank has been selected.
	DHW This menu allows you to modify the value of the DHW Thermostat. It is displayed if an input has been set as DHW/Buffer tank Probe and a hydraulic system including a DHW Buffer tank has been selected.

	Local Room This menu allows you to modify the value of the room thermostat. It is displayed if an input has been set as room probe or if the radio control 2Ways2+ has been enabled, or if a TriKey is included.
	Remote Room Menu to modify the remote keyboard Room Thermostat value It is displayed only through a remote keyboard if **A52** > 0.
Chrono	It allows programming and enabling the system ignitions/extinguishing<It is formed by 2 submenus.
	Mode It allows you to select the mode of your choice, or to disable all the schedules. • Enter in edit mode by clicking **P3** • Select the mode (Daily, Weekly or Week-end) • Enable/disable the Chrono mode by clicking **P2** • Save the new settings with the key **P3** **Program** The system includes three type of programming: Daily, Weekly, Weekend. After selecting the program of your choice: • Select the time with the keys **P6** or **P4** (**P5** or **P4** or K100) • Enter the edit mode (the selected time blinks) with the button **P3** • Modify the time with the keys **P6** or **P4** (**P5** or **P4** for K100) • Save the new settings with the button **P3** • Enable (a "V" appears) or disable the time slot (there is not a "V") by clicking **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 the ON time of the previous day to the value of your choice: Ex. 20.30 Set the OFF time of the previous day to 23:59 Set the ON time of the following day at 00:00 Set the OFF time of the following day to the value you prefer: Ex. 6:30 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 Monday-Friday and Saturday-Sunday and set the ignition and extinguishing times.
Refill	Menu to start the calculation of the used fuel and show the amount of remaining pellet in the tank. You have 4 charge levels: 100% (full tank), 75%, 50%, 25%, and 0 (disabled function). For correct operation, the manufacturer must set parameters **P111** and **P112**.
Soft Mode	Menu to switch on and off the Soft Mode. The menu is displayed if at least one of the parameters **P61**, **P62**, **P63**, **P64**, **P65**, and **P66** is set to a value different from zero.







4.2.2 User Menu 2

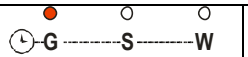
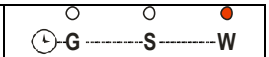
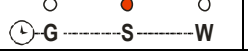
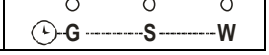
Settings	**Time and Date** It allows you to set day, month, year and current time
	Language It allows you to modify the language of the keyboard
	Radio control ***OFF*** : no radio control included ***ON:*** SYTX4 radio control is being used.
	Night Mode This Menu allows to set and enable the time slot to start and end the Night Mode. The programming of the time slots is similar to the one shown in the Chrono Menu.

<table>
<tr><td></td><td colspan="2">The menu is shown only if at least one motor has been disabled in Night Mode.</td></tr>
<tr><td></td><td colspan="2">Recipe
This menu allows you to select the Combustion Recipe; if you set up the parameter P04 = 1 you will not be able to see the menu.</td></tr>
<tr><td></td><td colspan="2">Summer-Winter
Menu to edit the functioning of the hydraulic system according to the season.</td></tr>
<tr><td></td><td colspan="2">Remote Thermostat
Menu to enable and disable the functioning of the remote keyboard Room Thermostat. It is displayed only on remote keyboard if A52 > 0.</td></tr>
<tr><td>Service</td><td colspan="2">Counters</td></tr>
<tr><td></td><td>Ignitions</td><td>Number of attempted Ignitions</td></tr>
<tr><td></td><td>Failed Ignition</td><td>Number of failed ignitions</td></tr>
<tr><td></td><td>Working hours</td><td>Operating hours in Run mode, Modulation Mode and Safety Mode</td></tr>
<tr><td></td><td colspan="2">Errors List
The menu shows the last 10 errors; in each line the error code and time/date of the error itself are shown.
On K displays, to delete the list, enter the Counters Reset menu</td></tr>
<tr><td></td><td colspan="2">Secondary Information
Information about configurable outputs and inputs are only available if they have been set.</td></tr>
<tr><td></td><td>Display</td><td>Description</td></tr>
<tr><td></td><td>xyzt-562</td><td>Product code</td></tr>
<tr><td></td><td>Fan</td><td>Exhaust Flue Gas Fan Speed (output V1)</td></tr>
<tr><td></td><td>Auger</td><td>Auger Speed (rpm) if P81 = 1, 2 or output state (On/Off) if P81 = 0</td></tr>
<tr><td></td><td>V2 Output</td><td>Output State (On/Off)</td></tr>
<tr><td></td><td>PW1 Output</td><td>Output State (On/Off)</td></tr>
<tr><td></td><td>PW2 Output</td><td>Output State (On/Off)</td></tr>
<tr><td></td><td>Pump</td><td>Output State (On/Off)</td></tr>
<tr><td></td><td>Airflow</td><td>Airflow (if an input is set as Primary Air Regulator)</td></tr>
<tr><td></td><td>Exhaust Flue Gas T.</td><td>Exhaust flue gas temperature</td></tr>
<tr><td></td><td>Boiler T</td><td>Boiler Temperature</td></tr>
<tr><td></td><td>Room T.</td><td>Room Temperature; it is displayed if an input has been set as Room Probe or if the radio control 2Ways2+ has been enabled or if a TriKey is included.</td></tr>
<tr><td></td><td>DHW T.</td><td>DHW Temperature; it is displayed if an input has been set as DHW Probe/Buffer tank and a hydraulic system with DHW Buffer tank has been selected</td></tr>
<tr><td></td><td>Buffer tank T.</td><td>Buffer tank Temperature; it is displayed if an input has been set as DHW Probe/Buffer tank and a hydraulic plant with Buffer tank has been selected.</td></tr>
<tr><td></td><td>Water Pressure</td><td>Water Pressure; it is displayed if an input has been set as water Pressure Sensor</td></tr>
<tr><td></td><td>IN2 Input</td><td>Input state (only digital): open- >0, closed- > 1</td></tr>
<tr><td></td><td>IN3 Input</td><td>Input state (only digital): open- >0, closed- > 1</td></tr>
<tr><td></td><td>IN6 Input</td><td>Input state (only digital): open- >0, closed- > 1</td></tr>
<tr><td></td><td>IN7 Input</td><td>Input state (only digital): open- >0, closed- > 1</td></tr>
<tr><td></td><td>HV1 Input</td><td>Input State: open- > 0, closed- > 1</td></tr>
<tr><td></td><td>HV2 Input</td><td>Input State: open- > 0, closed- > 1</td></tr>
<tr><td></td><td colspan="2">Cleaning Reset
Menu to reset the function ‘System Maintenance 2’. It is displayed if T67 > 0.</td></tr>
<tr><td></td><td colspan="2">Auger Calibration
It allows you to modify the default set values of the Auger’s speed or On times. The values can be set within the range –7÷7. The default value is 0. The menu is displayed only if A64 = 1.</td></tr>
<tr><td></td><td colspan="2">Fan Calibration
It allows you to modify the default set values of the Combustion Fan’s speed. The values can be set within the range –7÷7. The default value is 0. The menu is displayed only if A64 = 1.</td></tr>
<tr><td></td><td colspan="2">Automatic Power
This menu allows you to set combustion power in automatic mode only. If you set it, power change menus are no longer displayed.</td></tr>
</table>

	Loading The procedure activates the pellet manual loading and will stop automatically after 300 seconds. The system must be OFF for the function can be activated.
	Loading Test Use this procedure to set the value of the parameter **P112** of the Refill function. The procedure allows calculating the amount of pellet used in 10 minutes with the auger on the value **P05**/2. The system must be in Off to perform the measurement.
Display	**Contrast** It allows you to adjust the screen contrast
	Screen saver This Menu allows the user to enable and disable the screen saver
	Acoustic Alarm Menu to enable/disable the acoustic alarm
	Firmware Codes This Menu allows you to see the communication address of the control board, type of control board and firmware version. The board types can be: *MSTR* Master *INP* Inputs *KEYB* Keyboard *OUT* Outputs *CMPS* Composite *SENS* Sensors *COM* Communication
	Minimum Brightness It allows you to adjust the screen brightness when not using the controls
System Menu	Menu to enter into technical menu. The access is protected by a password (*default password: 0000*).

4.3 Menu for CP Panels

4.3.1 User menu 1

Combustion Power	Press with simple click the key **P3** or **K2/K6**: the Display **D2** blinks. With subsequent clicks you can change the power according to the available values. i.e.: 1–2–3–4–5–6-A (A=automatic combustion). After 5 seconds the new value is stored and the display returns to the standard mode.
Manual Loading	By long pressing the key **P3** or **K5** you can enable the Pellet Manual Loading, with the constant Auger activation. The lower display shows *LoAd*, the upper one shows the elapsed loading time. Press any key to stop loading. The load will be automatically stopped after 300 seconds. It will be enabled only if **A48** = 0.
Auger Calibration	You can access by long pressing the key **P2** or **K3** (you must repeat the operation twice in order to enter the edit mode). The lower display shows *Pell*, the upper one the set value. With the keys **P2/P4** or **K3/K7** you can increase/decrease the value; the default value is 0. After 5 seconds the new value is stored and the display returns to the Run mode. It will be enabled only if **A64** = 1.
Fan Calibration	You can access by long pressing the key **P4** or **K7** (you must repeat the operation twice in order to enter the edit mode). The lower display shows *UEnt*, the upper one the set value. With the keys **P2/P4** or **K3/K7** you can increase/decrease the value; the default value is 0. After 5 seconds the new value is stored and the display returns to the Run mode. It will be enabled only if **A64** = 1.
Boiler Thermostat	The value of the Thermostat is shown in the lower display. The minimum and the maximum value can be programmed by setting thermostats **Th26** and **Th27**
Enable Chrono (only CP120 keyboard)	By long pressing **K4** you can enable and select the operating mode of the internal Chrono thermostat. Daily Program  Week-End Program  Weekly Program  Chrono Disabled 
Summer/Winter Mode (only forCP120)	By long pressing the key **K8** you can modify the operating mode of the system

4.3.2 User menu2

Menu is accessed by simultaneously pressing the keys **P3** and **P4** for 3 seconds on CP110/CP115 keyboards, or by single click on the key **K5** on CP120 keyboards

Heating Power (**Air**)

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

Heating	*Description*
1–Number user powers	Power regulated in Manual from 1 to a number of user powers
Auto	Power automatically regulated according to the parameter value **P06**

Thermostats (**tErM**)

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

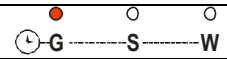
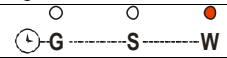
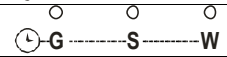
Display	*Thermostat*	*Description*
dHU	DHW	Menu that allows changing the value of the DHW Thermostat; it is displayed if an input has been set as DHW Probe/Buffer tank and a hydraulic system including a DHW Buffer tank has been selected. The minimum and the maximum value can be programmed by setting the thermostats **Th51** and **Th52**.
PuFF	Buffer Tank	Menu that allows changing the value of the Buffer tank Thermostat; it is displayed if an input has been set as DHW Probe /Buffer tank and a hydraulic system including a Buffer tank has been selected. The minimum and the maximum value can be programmed by setting the thermostats **Th51** and **Th52**.
AMb	Local Room	This menu allows you to modify the value of the Room Thermostat; it is displayed only if a room probe has been selected or if the radio control 2Ways2+ has been enables or if a TriKey is included.

Chrono (**Cron**)

Menu for the system Ignition/Extinguishing time slots programming.
It is formed by two submenus:

Enable Chrono Menu

This menu allows you to enable and select the Chrono thermostat functioning mode. The display shows the message **ModE** (only CP110/CP115 keyboards).

Mode	*Led*
Daily: Daily Program	
Week: Weekly Program	
WeEnd: Week-End Program	
OFF: Disables all programs	

Time-slots programming menu

The display shows the message **ProG** It has 3 submenus equal to the 3 allowed programming modes:

Daily: It allows setting 3 programs for each single day of the week.
Weekly: It allows setting 3 programs per day, the same for all the days of the week.
Week-End: It allows setting 3 programs per day, separating the Monday-Friday program from the Saturday-Sunday program.

Visualization	*Display*
Daily mode: week day	**M o**
Weekly Mode: Monday-Sunday	**M S**
Week-End mode: Monday-Friday Saturday-Sunday	**M F** **S S**
For the On time, the segment on the bottom of the D2 display is turned on	**- - - -** **1 I M o**
For the Off time, the segment on the top of the D2 display is turned on	**- - - -** **1 I M o**

Instructions

For each program select the ON and OFF time.

Description	*Display*

	1) Scroll down through the keys **P2**/**P4** or **K3**/**K7** until the submenu of your choice and push the key**P3** or **K5** — Daily 2) Push the buttons **P2**/**P4** or **K3**/**K7** to select one of the 3 available programs — - - - - 1 I Mo 3) Push the button **P1** or **K4** for 3 seconds — 00.00 4) Select Ignition time — 1 I Mo 5) Push the key **P3** or **K5** to enter the edit mode: the selected value (hours or minutes) blinks. Push the key **P3** or **K5** to move from hours to minutes and vice versa, **P2**/**P4** or **K3**/**K7** to edit the value. — 01.00 1 I Mo 6) Push the button **P3** or **K5** to save the set value — 21.30 1 I Mo 7) Select through the button **P2** or **K3** the OFF time and repeat from point 5 the procedure followed — 00.00 1 I Mo For each programming phase you can modify the minutes, setting them each 15 minutes (for example: 20.00, 20.15, and 20.45). Only if you set the value on hour '23' you can increment the minutes from 45 to 59, in order to obtain an Ignition crossing the midnight. **Programming Across Midnight** Set on a daily time slot, the OFF time on 23:59. Set, on the slot of the following day, the ON time on 00:00. *Example* *Monday Chrono Programming*: ON — 22.00 1 I Mo — 23.59 1 I Mo — OFF *Tuesday Chrono Programming*: ON — 00.00 1 I Tu — 07.00 1 I Tu — OFF
Combustion Recipe (**ricE**)	Menu to modify the current combustion recipe; the maximum value is the number of recipes displayed to the user. (Parameter **P04**). If **P04** = 1 the menu is not displayed.
Clock (**oroL**)	It allows you to set day and current time. The upper display shows hours and minutes, the lower one, the day of the week. *Instructions*: Push the key **P3** or **K5** to enter the edit mode. The selected value (hours, minutes or days) flashes. Edit the values with the keys **P2/P4** or **K3**/**K7**. Push the key **P3** or **K5** to edit other parameters. Push again **P3** or **K5** to store the set parameter. — *Display*: 07.33 Mo
Refill (**rFiL**)	This Menu allows you to calculate the used fuel and the amount of remaining pellet in the tank. You have 4 charge levels: 100% (full tank), 75%, 50%, 25%, and 0 (disabled function). For a correct functioning the manufacturer has to set the parameters **P111** and **P112**.
Soft Mode (**SoFt**)	Menu to switch on and off the Soft Mode. The menu is displayed if at least one of the parameters **P61**, **P62**, **P63**, **P64, P65,** and **P66** is set to a value different from zero.
Summer - Winter (**FUnC**)	It allows the Summer-Winter selection. It is included only on CP110 keyboards.
Remote Control(**TELE**)	Menu to enable and disable the radio control SYTX.
Night Mode (**nGHt**)	Menu to set and enable the time slot to start and end of the Night Mode. The time slots programming is similar to the one described in the Chrono Menu. For the programming across the midnight, set a time slot end to 23.59 and the following from 00.00 to a value of your choice. Night Mode allows you to disable the set time slots, the functioning of the following motors: Loading Motor (if **P100** = 1), Cleaning Motor (if **P103** = 1). The menu is displayed only if at least one motor is disabled in Night Mode.
Clean Reset (**rCLr**)	Menu to reset the 'System Maintenance 2' function. It is displayed if **T67** is greater than 0.
Automatic Power (**AuPo**)	This menu allows you to set combustion power in automatic mode only. Once it is set, power change menus are no longer displayed.
Manual Pellet Load (**LoAd**)	This Menu allows the pellet manual loading, with the constant Auger activation. The loading is activated by the key **P3** or **K5**, the lower display shows *LoAd*, the upper one shows the elapsed loading time. Press the key **P1** or **K1** to stop the loading. The function will stop automatically after 300 seconds.

Loading Test (**tFil**)	Use this procedure to set the value of the **P112** parameter of the Refill function. The procedure allows you to calculate the amount of pellet used in 10 minutes with the auger value of **P05**/2. The system must be into Off to carry out the measurement.
System Menu (**TPAr**)	Menu to enter into technical menu. The access is protected by a password *(default password: 0000)*.

5 Operating states

5.1 Block

Controls	*Combustion Fan*	*Auger*	*Igniter*
To exit the Block condition, push for 3 seconds the key **P1** or **K1**: if the Block conditions are no longer met the system goes into Off **state**.	**OFF**	**OFF**	**OFF**

5.2 Off mode

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
	Exhaust temperature > Thermostat **Th01**	→ It goes into **Extinguishing**	**OFF**	**OFF**	**OFF**
	If Water temperature > **Th25**	→ it goes in **Block**			

5.3 Check Up

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T01	If Exhaust flue gas Temperature > **Th09**	→ It 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**	→ It goes into **Run Mode**	**P24**	**OFF**	**ON**

5.4.2 Preloading

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

5.4.3 Fixed Phase

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

5.4.4 Variable Phase

During the phase the exhaust temperature minimum value is saved by system					
Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T05	If Exhaust flue gas Temperature > **Th09**	→ It goes into **Run Mode**	I Ignition: **V01**	I Ignition: **C01**	**ON**

	If Exhaust flue gas Temperature > **Th06 e** Exhaust temperature higher than minimum stored value + **D41**	→ It goes into **Stabilization**	II Ignition: **V10**	II Ignition: **C10**	
Control upon the expiry of **T05**	If Exhaust flue gas Temperature < **Th06** or Exhaust temperature lower than minimum stored value + **D41**	→ it goes into **Retry Ignition** from 5.4.4 Variable Phase			
		→ It 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**	→ It goes into **Run Mode**	**V02**	**C02**	**ON** If Exhaust flue gas temperature < **Th02**
	Exhaust temperature < Thermostat **Th06**	→ Ignition Recover from Variable Phase			
		→ It goes into **Extinguishing** with error **Er12** if the number of attempts has been reached			
Control upon the expiry of **T06**	Exhaust temperature > **Th06**+**D01**	→ It goes into **Run Mode**			
	Exhaust temperature < **Th0 6** + **D01**	→ Re-Ignition from 5.4.4 Variable Phase			
		→ It goes into **Extinguishing** with error **Er12** if the number of attempts has been reached			

5.6 Recovery Ignition

Waiting

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T13	Exhaust flue gas temperature > **Th01**	→ The Timer **T13** starts	**V09**	**OFF**	**OFF**
Control upon the Expiry of **T13**	Exhaust flue gas temperature > **Th01**	→ Waiting			

Brazier Cleaning

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	After the end of the Waiting phase, you can access to this one, which is available only when the output is on 'Cleaning Motor'. It will end when the motor switches OFF.	**OFF**	**OFF**	**OFF**

Final Cleaning

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T16	Exhaust flue gas temperature < **Th01**	→ Final Cleaning timer **T16** starts	**Max Speed**	**OFF**	**OFF**
Control upon the Expiry of **T16**	If Exhaust flue gas temperature < **Th01**	→ It goes into **Check Up**			

Auger feeding

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T50	Exhaust flue gas t. < **Th01** Thermostat	→ The timer **T50** starts	**OFF**	**Always ON**	**OFF**

5.7 Run Mode

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T14 Control upon the Expiry of **T14**	If Exhaust Flue Gas Temperature < Thermostat **Th03** or If Exhaust temperature < **Extinguishing Thermostat** for The used power	→ The timer **T14** of waiting Pre-Extinguishing starts	**User Power**	**User Power**	**OFF**
	→ It goes into **Extinguishing** with error **Er03**				
	If Exhaust flue gas temperature > Thermostat **Th07** or If Water Temperature > **Boiler Thermostat**	→ It goes into **Modulation**			
A01 = **1**	If room temperature > **Room Thermostat** *	→ It goes into **Modulation**			
A52 = **1**	If room temperature > **Remote Room Thermostat** *	→ It goes into **Modulation**			
A01 = **2 or 4**	If Room temperature > **Room Thermostat** *.	→ It goes into **Standby**			
A52 = **2 or 4**	If room temperature > **Remote Room Thermostat** *	→ It goes into **Standby**			
P26 = **2, 3**	If DHW temperature > **DHW Thermostat Th58** and Summer Mode	→ It goes into **Standby**			
P26 = **4**	If buffer tank temperature > **Buffer tank Thermostat Th58**	→ It goes into **Standby**			
P26 = **0** **A45** = **1**	In Summer Mode, if there isn't DHW demand	→ It goes into **Standby**			
	If Exhaust flue gas temperature > Thermostat **Th08** or If Water temperature > Thermostat **Th25**	→ It goes into **Safety**			
* This condition is true if there is no DHW demand or if a hydraulic plant with Buffer tank 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 upon the Expiring of **T14**	→ It goes into **Extinguishing** with error **Er03**				
A01 = 2 o 4	If Room temperature > **Room Thermostat** *.	→ It goes into **Standby**			
A52 = **2 or 4**	If room temperature > **Remote Room Thermostat** *	→ It goes into **Standby**			
A13 = 1	If during the time **T43** and Water temperature > **Boiler Thermostat** +**D23**	→ It goes into **Standby**			
P26 = **2, 3**	If DHW temperature > **DHW Thermostat Th58** and Summer Mode	→ It goes into **Standby**			
P26 = **4**	If buffer tank temperature > **Buffer tank Thermostat Th58**	→ It goes into **Standby**			
P26 = **0** **A45** = **1**	In Summer Mode, if there isn't DHW demand	→ It goes into **Standby**			

	if Exhaust flue gas temperature > Thermostat **Th08** or if Water temperature > Thermostat **Th25**	→ It goes into **Safety**			
* This condition is true if there is no DHW demand or if a hydraulic plant with Buffer tank has been selected					

5.9 STANDBY

When the conditions that brought the system in standby are solved, the timer **T11** starts. Upon its expiry, the system goes into Check Up.
If exhaust flue gas temperature > Thermostat **Th08** or water temperature > Thermostat **Th25** the system goes into 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 upon the expiring of **T57**	Exhaust flue gas temperature > Thermostat **Th28**	→ Waiting			

Brazier Cleaning

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	After the end of the Waiting phase, you can access to this one, which is available only when the output is on 'Cleaning Motor'. It will end when the motor switches OFF.	**OFF**	**OFF**	**OFF**

Final Cleaning

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

Auger feeding

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T50	Exhaust flue gas t. < **Th28** Thermostat	→ The Timer **T50** starts	**OFF**	**Always ON**	**OFF**

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

Pause Phase

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
T32	Extinguishing of the combustion. At the end the Work phase starts	**OFF**	**OFF**	**OFF**

Work Phase

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
T33	Reactivated combustion. Upon the expiry of **T33** the Pause phase starts	**V12**	**C12**	

5.10 Safety

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T15	Exhaust Flue Gas Temp. < Thermostat **Th08** and Water Temp. < Thermostat **Th25**	→ It returns to its previous state	**V12** it was in **Standby**, it continues with the same power if it was in **Modulation**	**OFF**	**OFF**
Control upon the expiring of **T15**	→ goes in **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 upon the Expiry of **T13**	Exhaust flue gas temperature > Thermostat **Th01**	→ Waiting			

Brazier Cleaning

Parameters	*Controls*	*Combustion Fan*	*Auger*	*Igniter*
	After the end of the Waiting phase, you can access to this one, which is available only when the output is on 'Cleaning Motor'. It will end when the motor switches OFF.	**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 upon the expiring of **T16**	→ goes into **OFF** with no error, otherwise goes into **Block**		**OFF**		

Auger feeding

Parameters	*Controls*		*Combustion Fan*	*Auger*	*Igniter*
T50	exhaust flue gas t. < **Th01** Thermostat	→ The Timer **T50** starts	**OFF**	**Always ON**	**OFF**

6 FUNCTIONS

6.1 SYTX RADIO CONTROL

Keys

Key Off: system extinguishing
Key On: system Ignition
Key - s +: decreasing/increasing of the combustion power

Code Change

For the radio control:

- check the manual provided with the device

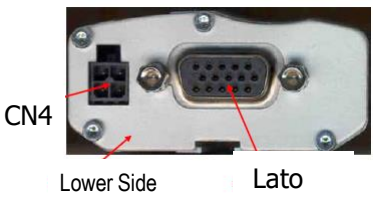
On the Controller:

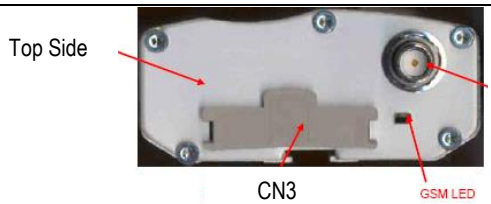
- cut off the voltage power supply to the control board
- connect to the main voltage supply again while pressing for 5 seconds any key of the radio control until the emission of the acoustic signal coming from the controller that will confirm you the new code has been registered

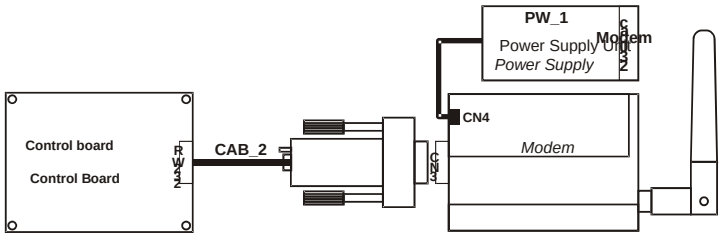
6.2 MODEM

The system manages a modem module (upon request), through which you can talk via SMS with to the stove, in order to carry out Ignitions, Extinguishings, state request and receive information on possible block conditions.
The modem must be connected to the RS232 door of the board using the provided cables and connectors and you have to connect it to the power supply through the dedicated adapter.
For a proper operation:

- Use a SIM card enabled for GSM data traffic of any mobile provider.
  The insertion and removal of the SIM card must be done with the Modem NOT supplied
- Disable the SIM PIN request







Two LEDS define the modem status:

GSM LED	*LED activity*	*Modem Status*
ON	LED ON fixed	The modem is powered, it is ready to function but not yet recognized by the network or the PIN code has entered yet or the aerial is not connected (lack of signal)
	LED blinking (once every 2 seconds)	The Modem is ON and ready for incoming calls
	LED blinking (every second)	The modem is powered and currently in communication (Voice, Data or Fax)
OFF	LED OFF	The modem is not powered or is in the reset phase

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

Start	To start Ignition from system Off; the Modem sends back a message to the number from which it received the command which reports the system status with any error code that occurred
Stop	To start Extinguishing from system in an On state; the Modem sends back a message to the number from which it received the command which reports the system status with any error code that occurred
Status	To ask the system's state; the Modem sends back a message to the number from which it received the command which reports the system status with any error code that occurred
Learn	To learn the number to send an SMS in case of Block; if there is a Block condition, the Modem automatically sends a message to the learnt number with the system's state and the alarm error code.
Reset	It allows you to unlock the system

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 States

6.3 Combustion Management

6.3.1 Room Thermostat

The system provides different solutions to detect the room temperature. You can use a NTC probe, the radio control 2Ways2+ or the TriKey.
If more than a device is included, the priority will be as follows: 2Ways2+ radio control -> TriKey -> probe.
If the radio control does not communicate with the base or the radio thermostat is disabled, the thermostat taken into consideration is the Probe's base one or the TriKey one if included.

6.3.2 Combustion Fan Speed

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

6.3.3 Auger Speed

The parameter **P81** sets the modality of Auger regulation.	
P81=0	Auger without Encoder managed in pause-work (unit express in seconds).The regulation step is 0.1 second.
P81=1	Auger with Encoder managed in RPM. In case of signal presence but regulation failed, the system goes into Block with alarm **Er48**. In case of sensor break with absence of the signal, the system goes into Block with alarm **Er47**.
P81=2	Auger with Encoder managed in RPM. In case of signal presence but regulation failed, the system goes into Block with alarm **Er48**. In case of sensor break with absence of the signal, the system goes into Block with alarm **Er47**. Resetting the error, the system automatically switches to **P81 =** 0.

6.3.4 Combustion Standby

The Standby is a temporary extinguishing of the flame due to the attainment of the target temperature of the medium to be heated. Switching to Standby can be activated from Enables Menu by setting 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 boiler water temperature>Thermostat Boiler, the system goes into Modulation
A13 = 1if → boiler water temperature>(Boiler Thermostat + **D23**)when the timer **T43** is expired, the system goes into Standby

To exit Standby, set the hysteresis value of the related thermostat.

6.3.5 Automatic Combustion Power

When setting the working power, the user can set the Automatic modality [A]. The work power is automatically selected according to the room temperature and the value of the set Boiler Thermostat **Th24**. If:

- boiler water temperature ≤ **Th24** – **D08** → the system goes to the maximum available power
- **Th24** – **D08** < boiler water temperature < **Th24t** → he combustion power is chosen proportionally (the greater is the difference between the water temperature and the thermostat **Th24**, the higher will be the chosen power).
- boiler water temperature ≥ **Th24** → the system goes to Power 1 or, if enabled, at Modulation Power

The parameter **D08** must be a multiple of the number of operating powers minus one.

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 or Mod.

6.3.6 Delay time combustion power changes

When the system comes out of Ignition to go into **Run Mode**, the Combustion Power, starting from Power 1, goes to operating power increasing its value with the delay time same as **T18**.

Other manual or automatic power changes are managed with the delay time equal to the timer **T17**.

6.3.7 Pellet Loading Correction

The user sets the pellet loading On times/ speed with Step – 7 ÷ 7.**P15** is the percentage value of the single step and affects all the default Working Powers. Calculated values must fall within the 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

6.3.8 Combustion Fan Correction

The user sets the Combustion Fan speed with Step –7 ÷ 7. **P16** is the percentage value of the single step and affects all the default Working Powers. Calculated values must fall 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 inputs IN2, IN3, IN6 and IN7 according to the value of the respective management parameters (**P77**, **P75**, **P78**, and **P82**).

6.4.1 Door Sensor

In case of open door, on the panel appears the message '*Port*'. The Auger stops and, if the system isn't in Off or Standby, the Combustion Fan works at speed **P22**. If the door is open for more than **T92** seconds the system goes in Block with error **Er44**. If the contact is not used short circuit the related pins.

6.4.2 Pellet Thermostat

When the contact opens, there is backdraft:

- the system goes in Block (with alarm message Er06)
- if
  - a configurable output has been set as Auger 2 (**P44** = 16, 17, product with 2 Augers) the Auger stops and Auger 2 works for the time **T34**
  - a configurable output has been set as Safety Valve (**P44**=1, product with one Auger and one Safety Valve) the Auger stops and the Safety Valve closes
  - no configurable output has been set as Auger 2 or Safety Valve (product with 1 Auger) the Auger continues working for the time **T34**

If the product only has one auger and the Combustion Fan is off, it will switch on at speed **V12**.

6.4.3 Room Thermostat

Setting the parameter Enables **A01** it is possible to:

- **A01** = 0
  open contact: the system goes into Extinguishing
  closed contact: the system goes into Ignition
- **A01** = 1
  closed contact: the system goes into Run Mode
  open contact: the system goes into Modulation
- **A01** = 2
  closed contact: the system goes into Run Mode
  open contact: the system goes into Standby
- **A01** = <t1/>3
  contact closed: the system switches on the plant pump
  Contact open: if the water temperature exceeds the value of the activation thermostat of the plant pump (**Th19** or **Th59**), the system blocks the plant pump until the thermostat **Th21** or **Th78** are reached (if **P26** = 4).
- **A01** = 4
  contact closed: the system switches on the plant Pump and goes into Run Mode
  Contact open: the system goes into Standby and blocks the plant pump as in case 3.
- **A01** = 5
  contact closed: Heating Fan is working regularly
  contact open: the Heating Fan works at Power 1

If there is domestic hot water demand and the Pump is used also for DHW, the Room thermostat will not block it.
If **A01** = 1, 2, 3, 4, 5 if you don't use the input short-circuit pins.

6.4.4 Flow Switch

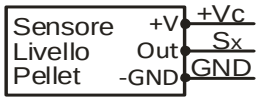
Enable one of the configurable inputs as flow switch if a hydraulic plant including it has been set (**P26** = 0, 5).
By adjusting the parameter **P91** on the software and CP keyboards, you can set the input to NC or NO.

6.4.5 Pellet Level Sensor

When the level of the fuel drops below the defined threshold, the system, after reporting the lack of pellet for a time equal to **T24**, goes in extinguishing with error **Er18**. All signals cease when the tank is refilled with pellet and from that moment re-ignition is possible.
If **P09** = 2, 3 in case of lack of pellet in the tank, the system does not go in Extinguishing but continues to signal the lack of pellet.
When in the system there is a motor for the pellet loading, in case of lack of fuel, also this latter is activated. Via parameter **P09** you can invert the sensor reading.
You can link different types of sensors to the board.

Sensors with an output in continuous voltage
The temperature controller only supports PNP sensors and the value given to the output signal cannot exceeds 12V. Sensors with output up to 5V can be connected to all the inputs. Sensors with 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 paragraph 2.1 about electrical wirings.

6.4.6 DHW Probe/Buffer tank

Enable one of the configurable inputs as DHW Probe/Buffer tank if a hydraulic plant including it has been selected (**P26** = 2, 3, 4).

6.4.7 Cleaning Motor Limit switch

The contact is used in conjunction with Cleaning Motor.

6.4.8 Room Probe

Setting the parameter Enables **A01** it is possible to:

- **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** = < t1/ > 3
  Room Thermostat not reached: the system restarts the plant pump
  Room Thermostat reached: if the water temperature exceeds the plant pump activation thermostat (**Th19** or **Th59**), the system blocks the plant pump until the thermostat **Th21** or **Th78** (if **P26** = 4) is reached
- **A01** = 4
  Room Thermostat not reached: the system restarts the Plant Pump and switches to Run Mode
  Room Thermostat reached: the system goes into Standby and blocks the plant pump as in case 3
- **A01** = 5
  Room Thermostat not reached: Heating Fan is working regularly
  Room Thermostat reached < : the Heating Fan works at Power 1

If there is water sanitary demand and the Pump is used also for the sanitary, then 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

The Regulator reads the air flow speed in the suction pipe of the stove/boiler.

The reading range is 0÷2000. In case of not connected probe the Speed value is 0.

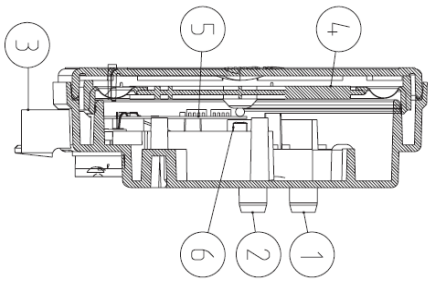
Connections:

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

A Differential Pressure Sensor or a Flow meter 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 pic. particulars 1 and 2) must be oriented downwards. For the reading, connect to **P2** (see pic. particular); let the connector free**P1**.



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

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

Functioning:

The aim of regulator, by acting on the Auger and Fan, is to keep the air flow constant for each working power in order to optimize the combustion. The regulator is activated only in Run Mode and Modulation and if **A35** = 1 also in Fixed Ignition, Variable Ignition and Stabilization.

For the correct use, proceed as follows:

1. Switch on the system and disable the regulator (**A24** = 0). Check the combustion air speed for all the used powers when in Run Mode or Modulation mode.
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 delta in relation to the set value for each power (parameters **FL52** ÷ **FL60**).
   - The time interval for the combustion regulation (parameter **T19**, considering 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 type of regulation you want to perform (parameter **A24**)
   - Width of the regulation step for each output (**V60** and **C60**)
   - The regulation priority on the selected outputs (function on only if selected a configuration of **A24** with two adjustable outputs). According to the value **A31** we will have:
     A31 = 0- > The controller starts to regulate the first output, then goes to the second one if requested, but it always comes back to the first
     A31 = 1- > the regulator starts to regulate the first output, then goes to the second ones if requested 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** we will have:
     A25 = 0- > if regulation fails, the selected outputs will work 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- > in case of failed regulation, the regulator is deactivated, the selected outputs continue to work with default parameters and on the display appears **Er17**
     A25 = 3- > in case of failed regulation, the system goes into Block with error **Er17**
     A25 = 4- > in case of failed regulation, the system goes into Recovery Ignition and the regulator is initialized.
3. Turn off and restart the system with the regulator enabled. The first intervention of regulation will take place after a waiting time equal to **T80**. The system reads the air flow speed for the time **T19** and checks if it is within the range **FL2X**± (**FL2X** * **FL5X**). If this does not occur, the controller changes the set values for Combustion Fan and/or Auger. Regulations affect the outputs in the following way:
   - *Air speed detection lower than the defined range*
     Combustion Fan speed is increased from the value **V60** up to the value **P30**
     The speed/running hour of the Auger is decreased by the value **C60** up to the value **P27**. Otherwise, if **P148** > 0 is decreased up to the set value minus the percentage value **P148** (**P27** remains the lower limit anyway)
   - *Air speed detection higher than the defined range*
     The combustion fan speed is decreased from the value **V60** up to the value **P14**

The speed/running hour of the Auger is increased by the value **C60** up to the value **P57** (or **P05** if **P57** = 0). Otherwise, if **P148** > 0 is increased up to the set value plus the percentage value **P148** (**P05** or **P57** remains the higher limit anyway)

The Regulator operation can be divided in two modes:

- *Regulation of one output* (**A24 =** 1 or 3)
  The regulator modifies the set value of only one output and if it manages to keep it within the set limits, the System works properly. Otherwise, if the value reaches the minimum or maximum value for the regulated output, without falling within the air speed limits, the System waits a time equal to **T20** then, if **A25** = 0 the regulator continues with current data, if **A25** = 1 sit resets and restarts from the beginning, if **A25** = 2 it goes into error, disable itself and the message **Er17** is displayed, if **A25** = 3 the system goes into Block with error **Er17**, if **A25** = 4 the system goes into Recovery Ignition.
- *Regulations of two outputs* (**A24 =** 2 or 4)
  If the value reaches the minimum or maximum value for the regulated output without falling within the air flow limits, the regulator waits the time **T20** and then switches to the regulation of the second output. If also the regulation of the second output reaches its minimum or maximum value without the air flow is within the limits, after the time **T20**, if **A25** = 0 it continues with the current data, if **A25** = 1 it resets and starts again from the beginning, if **A25** = 2 it disables itself and message **Er17** appears on display, if **A25** = 3 the system goes into Block with error **Er17**, if **A25** = 4 the system goes into Recovery Ignition.

4. If the regulator is interrupted by random events which force to change the combustion, such as Periodic Cleaning, then when the system returns to the previous state, the regulator 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 parameters.
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 on 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**.

Regulation in case of minimum flow:
If the flow decreases in such a way able to compromise the proper operation of the equipment, there is the chance to activate a procedure in order to restore a suitable value of the flow. To activate this procedure, set **FL19** to a value greater than 0.
If the detected flow is lower than **FL19** Flow meter regulation is stopped and, in the system is in Run Mode or Modulation, the Combustion Fan speed becomes equal to **V26**, while the loading, according to the value of **A33**, is stopped or performed at minimum power **P27**.
This phase has a minimum duration of **T80** seconds, after which the system waits the flow to become greater than **FL19 + FL49** for a time **T93**. If this occurs, the normal operation is restored, and the regulator uses default parameters for Auger and Fan. If the flow remains under **FL19** + **FL49**, the system goes into Block with error **Er41**.
During this procedure, Periodic Cleaning is not performed and changing power is allowed but with no effects.

NOTE:
If the user changes the Auger and Fan settings with the Calibration, the regulator will take the new values obtained as starting values for the combustion management.
The values of each power obtained from regulation are stored by the system and used as starting values for the following settings.
These values are reset (and the system will start from default parameters) if:

- The combustion recipe is modified
- The value of the parameter **A24** is modified
- In case of lack of Voltage Power Supply
- On ignition if **A34** = 1
- In the event that errors **Er02**, **Er03**, **Er12**, **Er13**, and **Er18** occurs.

6.4.10 External 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 you have an Encoder Auger.

Connections:

Sensor	*uIN2*
+V	pin 32

Out -GND	pin 22 pin 23

6.4.12 Water Pressure Sensor

Use the input if the system requires a pressure sensor.

Connections:

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

6.5 Configurable Outputs

You can set the output V2 according to the value of the parameter **P44**

6.5.1 Pellet Safety Valve

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

6.5.2 Loading Motor

When the Pellet Level Sensor reports lack of material, the output switches on to load the tank.
According to the parameter **P09** we have the following functions:

- **P09** = 0, 1
  If during the 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 loaded, it is possible to reset the error and restart the system. If the pellet level is reached, the manual loading will continue for a time equal to **T23**.
- **P09** = 2, 3
  If the set pellet level is not reached in time **T24** the motor stops and the display shows the message '*Refill* '. If the set pellet level is reached, the loading of the material continues for a time equal to **T23**.

6.5.3 Output under Thermostat

The output is managed by **Th56**Thermostat: over this value it will be supplied, otherwise 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 Combustion Fan 1.

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 works at Power 1
- In any operating state if **A01** = 5, for Room Thermostat works at Power 1
- For safety reasons, if exhaust flue gas temperature 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] and the Manual mode [M]; if you choose the Automatic mode the power will be automatically selected according to the parameter value **P06**.
If **P06 =** 1 the heating power is the same as the combustion power, if **P06 =** 2the heating power is automatically selected by the system in use of the exhaust flue gas temperature, by the Thermostat value **Th05** and by the parameter **D04**, if **P06 =** 3 the heating power is automatically selected by the system in use of room temperature, by Room Thermostat in use and automatically selected by the room temperature of the system in use, by the value of the Room Thermostat in use and by the parameter **D05** or **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 if Combustion Fan is on.

6.5.7 Errors Signaller

The output is on if the system is in Block state.

6.5.8 Electro valve/ P2 Pump

The output manages a 2 wires electro valve or a no-high-efficiency pump.
If you use the 2-3 ways module which switches the Triac output to changeover relay, it will be possible to connect a three wires electro valve or a high efficiency pump.
The operation of the connected charge depends on the selected hydraulic plant.

6.5.9 Auger 2 (Pause-Work)

By setting **P81** = 0 the output will be on for a time increased of a percentage **P72** compared to the one of Auger 1; the maximum working time consists of the parameter **P57** (or **P05** if **P57** = 0). If **P81** = 1, 2 the output is always ON if the Auger 1 is ON. In Extinguishing and Standby-Extinguishing the output switches off only upon the expiry of the timer **T27**.

6.5.10 Auger 2 (always on)

The output is always on when the Auger 1 is enabled to work (during Ignition, Stabilization, Run Mode and Modulation) and it will be off, compared to the switch off of the first Auger, only at the end of timer **T27**.

6.5.11 Cleaning Motor

In OFF and Block the motor is always OFF for safety reasons. The system does not exit the Check Up mode until the motor is not placed back.
The motor activates:

- For the time **T86**, in Extinguishing, Recovery 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 in 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**. The combustion parameters do not change; the cleaning is repeated **P49** times. To disable the cleaning when the system is fully operational, set **P49** = 0.
  If you don't use a limit switch, in order to not activate the motor to a specific power, it is possible to set up the working time on 0.

The motor management, in this case, can be done through a limit switch or without it:

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

Phase	*Description*
Phase 1	The system enables the motor and checks the limit switch state: when it opens, moves to Phase 2. If upon the expiry of the timer **T85** the limit switch is still closed, the system goes in block with error **Er25**.
Phase 2	The maximum duration of this phase is **T86** or **T141**÷**T148** seconds: in this time the motor must end its move forward 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 motor is Off and must be placed on its starting position (the limit switch must be closed). At the end the system switches to Phase 4. If upon the expiry of **T99** the limit switch is still open, the system goes into Block with error **Er25**.
Phase 4	If the number of performed cleaning cycles is lower than the number of set cycles, the system starts another cleaning cycle starting from the Phase 1, otherwise the Cleaning function is over

If during the normal functioning, the temperature controller reads the limit switch open, the motor is enabled to close the contact; if it is not enabled, the system goes into Block with error message **Er25**.

- management without limit switch:

Phase	*Description*
Phase 1	The system switches the motor on for a time equal to **T86** or **T141** ÷ **T148** seconds: during this time the motor has to end its move forwards 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 motor is Off and must be placed on its starting position. At the end the system switches to Phase 3.
Phase 3	If the number of performed cleaning cycles is lower than the number of set cycles, the system starts another cleaning cycle starting from the Phase 1, otherwise the Cleaning function is over

6.5.12 Cleaning Motor 4

The output is on during the periodic cleaning of the brazier, in Check Up and during the final cleaning of the states Extinguishing, Standby and Recover Ignition.

6.5.13 Auger voltage supply in PWM

The output is needed to supply the Auger if managed in PWM o DAC.

6.6 Auger Unlock Function

These function is available only for Auger's motors set with Encoder (**P81** = 1, 2) and it has the purpose to restart the motor if it should block due to some piece of fuel. If the temperature controller reads the speed of the auger to zero for a few seconds when it should run, it gives to the auger a series of pulses at maximum speed to try to unlock it. If this does not 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 parameter **P118**.

6.7 System Maintenance1 Function

When the system exceeds the working hours set by the parameter **T66** the need to contact the service is reported. The display shows the message '*Service*' and the system if **P86** = 1, goes into Block. To unlock the system, or if **P86** = 0 to make the message disappear, it is necessary to access to Reset Service Menu. To disable this function set **T66** = 0; to enable it set **T66** > 0.

6.8 System Maintenance 2 Function

When the system exceeds the working hours set by the parameter **T67** the need to clean the system is reported. The display shows the message '*Cleaning*' and a periodic acoustic signal is emitted. To stop the acoustic signal, access to 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 passed the Pre-heating Phase of the Ignition and it is turned Off by an external device (such as the internal Chrono, the external Chrono or the modem), it ends Ignition and Stabilization phases and, when fully operational, it goes into Extinguishing. The display shows the message '*Ignition Block*'. In the event of any error, the system goes immediately into Extinguishing with error.
If you press the ignition key it is possible the prompt Extinguishing or Reignition.

6.10 Periodic Brazier Cleaning

When the stove is up to speed, or if **A61** = 1 also in Modulation, the system automatically provides with the periodic cleaning of the brazier and the display shows the message that the cleaning is in progress. According to the value of **A62** we will have:

- **A62** = 0
  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. Minimum and maximum values are defined by parameters **P14** and **P30** for the Fan and **P27** and **P57** (or **P05** if **P57** = 0) for the Auger; setting a value to -100% the related output will switch off. If **P92** is set to 101 the Combustion Fan will be set to the maximum value.
- **A62** = 1
  Periodic cleaning is performed at time intervals that can change with the combustion recipe (timer **T202**) and for a duration that can change both with the combustion recipe and the power (timer **T203** ÷ **T208**).
  Combustion Fan and Auger values will change by the percentage **P192** and **P193** compared to the set ones. Also these parameters change with the combustion recipe.
  Minimum and maximum values are defined by parameters **P14** and **P30** for the Fan and **P27** and **P57** (or **P05** if **P57** = 0) for the Auger; setting a value to -100% the related output will switch off. If **P192** is set to 101 the Combustion Fan will be set to the maximum value.
  If the system comes from Ignition, the cleaning is performed with a further delay of **T201** minutes (if the system directly comes from Check Up the timer **T201** is not taken into consideration).

6.11 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 data recovery 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 its previous state

- If the system was ON and power supply lacked for a time between **T88** and **T89** the system goes into Recovery Ignition
- If the power supply lacked for a time longer than **T89** the system goes into Block with error Er15

- Recover status mode 1 (**A53** = 1)
  - If the power supply lacked for less than **T88** the system returns to its previous state
  - If the system was ON and the power supply lacked for a time longer than **T88** the system goes into Recovery Ignition

6.12 Fast Extinguishing Function

This function allows to take the system in OFF mode, skipping the Extinguishing phase; the system errors check is guaranteed. To enable it, follow the procedure below:

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

6.13 Automatic Extinguishing Function

If the parameter **A40** is different from 0 the system after **T84** minutes working in Run Mode and Modulation, goes into Recovery Ignition. If **A40** = 2 the duration of the extinguishing phase of the Recovery Ignition is **T118** seconds and the thermostats are not taken into consideration.

6.14 Hydraulic Plant

6.14.1 Plant selection

Setting the parameter **P26** It is possible to select the most suitable hydraulic plant configuration.

Block of Plant Pump for Room Thermostat/Probe or internal Chrono:

- It is available only above the value of the pump activation thermostat **Th19** or **Th59** (for plant 4)
- In plants 0 and 2 if there is DHW demand the Pump P1 is not blocked and, if previously blocked, is switched on

Fan and Auger management when there is sanitary water demand:

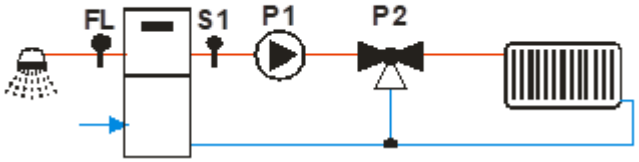
When there is DHW demand, the system is in Run mode and in the automatic management is working at maximum power, Fan and Auger values are editable in percentage by their related parameters **P108** and **P109**.

Electrical Wiring:

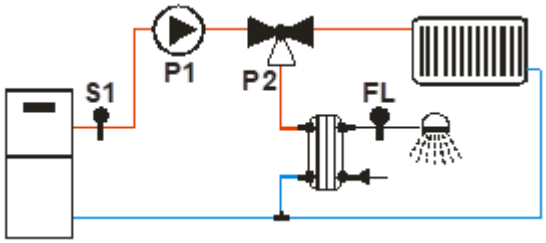
S1=Boiler Probe->Pin 26–27 **S2**=DHW Probe/Buffer tank **FL**=Flow switch
P1=Pump->Pin 14-15 **P2**=Electro valve/Pump->5-6

CONFIGURATION 0

Setting the parameter **P26** = **0** the configuration shown in pictures 1 and 2 will be selected.



Pic. 1



Pic. 2

Heating

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

Water recirculation

When there is domestic hot water demand and the water temperature in the boiler exceeds the thermostat value **Th19** or the water temperature in the boiler exceeds the thermostat value **Th20** the Valve is ON.
If the water temperature exceeds the thermostat value **Th21**, the Valve switches towards the plant.

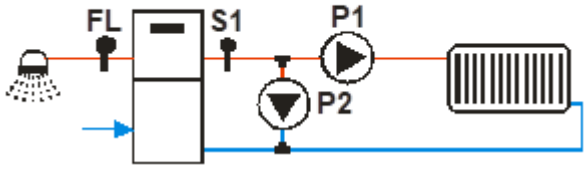
Example: **Th18** = 5 °C, **Th19** = 40 °C, **Th20** = 30 °C, **Th21** = 70 °C

Water Temperature	*Flow Switch*	*Mode*	*P2 Valve*	*P1 Pump*
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**

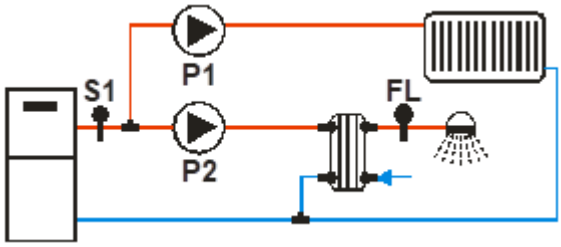
T≥70°C			plant (OFF)	**ON**

CONFIGURATION 1

Setting the parameter **P26** = **1** it is chosen the configuration shown in pic.3 and in pic.4.



Pic. 3



Pic. 4

Heating

The P1 Pump switches on above the Pump Activation Thermostat **Th19** and when there is DHW demand is stopped. To avoid freezing, the Pump P1 will be on if the water temperature is below the thermostat **Th18**. If the water temperature exceeds the value of the thermostat **Th21** or safety reasons the P1 Pump is always on.

Water recirculation

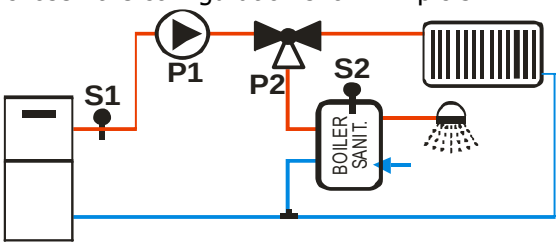
When there is a water demand for domestic use and the water temperature in the boiler exceeds the value of **Th19** thermostat or the water temperature in the boiler exceeds the value of the **Th20** thermostat the Pump P2 is on.
If the water temperature exceeds the value of the thermostat **Th21** the Pump P2 is disabled.

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

Water Temperature	*Flow Switch*	*Mode*	*P2 Pump*	*P1 Pump*
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** it is chosen the configuration shown in pic.5.



Pic. 5

Heating

The pump P1 is on if the water temperature in the boiler exceeds the value of thermostat **Th20** and the difference between the temperature read by probe S1 and S2 probes is greater than the thermostat **Th57** .
The Pump is on also if the water temperature in the boiler exceeds the value of the thermostat **Th19**. To avoid the water freezing, the Pump will switch 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.

DHW

The Valve is switched towards the DHW Buffer tank if the water in the buffer tank is lower than the thermostat **Th58** and the boiler temperature is higher than the thermostat **Th20**.
For safety reasons, if the temperature of the water in the boiler exceeds the value of the thermostat **Th21**, the Valve switches towards the plant.

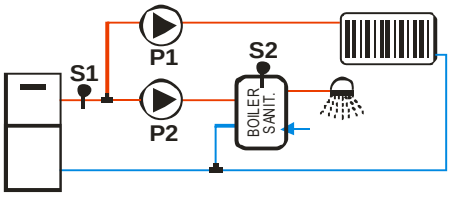
Example: **Th18** = 5 °C, **Th19** = 65 °C, **Th20** = 50 °C, **Th21** = 70 °C, **Th57** = 5 °C, **Th58** = 55 °C

Probe S1 Temp.	*Probe S2 Temp.*	*Mode*	*Differential*	*P2 Valve*	*P1 Pump*
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** it is chosen the configuration shown in pic.6.



Pic. 6

Heating

The Pump P1 switches on above the Thermostat **Th19** if the difference between the temperature read by probes S1 and 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**.

DHW

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

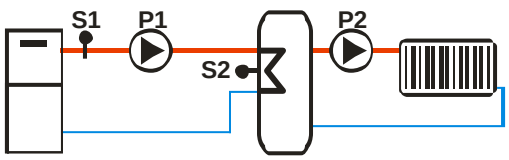
For safety reasons if the water temperature in the boiler exceeds the value of the thermostat **Th21** P2 Pump is switched off.

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*	*P2 Pump*	*P1 Pump*
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** it is chosen the configuration shown in pic.7.



Pic. 7

Buffer tank Loading

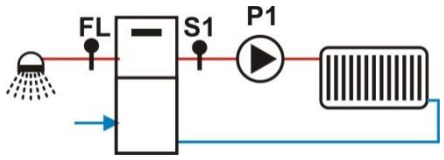
If the temperature in the boiler is greater than the Pump Activation Thermostat **Th19**, the system heats the water in the Buffer tank if there is differential between the two probes (temperature in the boiler menus temperature in the Buffer tank greater than the differential thermostat **Th57**). For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

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

S1 probe temperature	*Differential*	*P1 Pump*	*P2 Pump*
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** it is chosen the configuration shown in pic.8.



Pic. 8

The Output Aux 1 switches on if the boiler temperature exceeds the thermostat **Th56** value.

Heating

The P1 Pump switches on over the Pump Activation Thermostat **Th19**.
To avoid the water freezing 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.

DHW

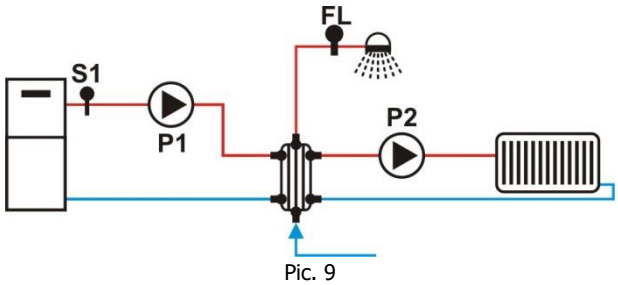
When there is DHW demand the system blocks the Pump.
The output V2, if set, switches on if the water temperature in the boiler exceeds the value of the thermostat **Th56**.

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** it is chosen the configuration shown in pic.9.



Pic. 9

Heating

P2 Pump switches on above the Thermostat **Th19** if there is no DHW demand.
To avoid the water freezing P2 Pump switches on if the temperature of the water drops below the thermostat **Th18** or if rises above the value of the thermostat **Th21**.

DHW

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

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

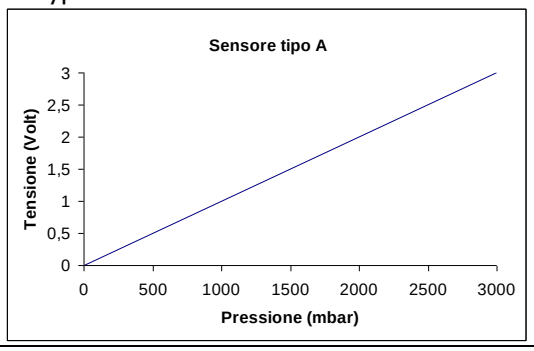
Probe S1 Temp.	*Flow Switch*	*Mode*	*P1 Pump*	*P2 Pump*

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**

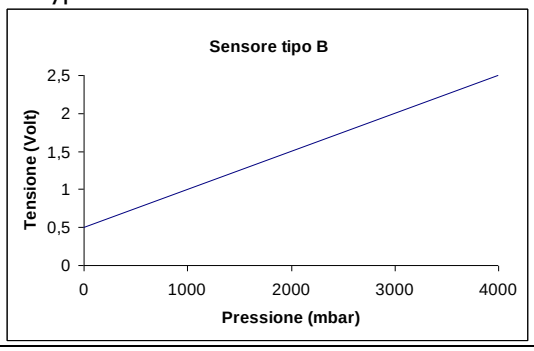
6.14.2 Pressure Sensor Selection

By setting the parameter **P20** you can select the type of Pressure Sensor to use. If:

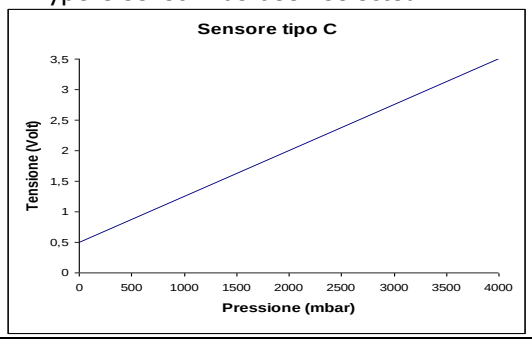
P20 = 0 Type A sensor has been selected



P20 = 1 Type B sensor has been selected



P20 = 2 Type C sensor has been selected



6.14.3 DHW Function

In hydraulic plants with Flow switch or with DHW buffer tank, if there is DHW demand the DHW Function switches on and the Boiler Thermostat turns equal to the value of the Thermostat **Th21** - **Ih21**. When the demand no longer exists the DHW Function ends upon the expiry of the time **T68**.

6.14.4 Pump and Valve Ant-Lock Function

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

6.14.5 On-Off Pump Operation

If the Pump P1 is off and the system is on Ignition, Stabilization Normal or Modulation Mode the Pump can work in Pause-work, according to the times **T122** and **T123**.
The function is disabled if **T122** = 0 or if the Plumbing 5 is selected in summer operation mode.

6.15 Refill Function

This function only gives an estimate of the remaining fuel in the tank.
The manufacturer must set parameters **P111** and **P112** (to set this parameter, use the '*Loading Test*' function).
Any time the pellet is loaded in the tank, the user has to select the reached loading level (25%, 50%, and 75% o 100%) in the specific menu.
If the level goes below the 20% the message '***Refill***' appears and you have 180 minutes before the function switches off. The function also switches off in case of error **Er03** or **Er18**.
If the parameter **P12** = 1 and the level goes below the10%, the system goes into Block with error **Er18**.
To enable the function enter again the ***Refill*** menu and to disable it, set the value to 0.
If **P111** = 0 the function is not available and related menus are not displayed.

6.16 Soft Mode Function

If the function is activated, the auger and fans speed is equal to power 5 decreased by a settable percentage; heating and duct fans speed is decreased in each operating state, combustion fans and auger speed is decreased only when the system is in Run Mode. The display shows the message '*Soft Mode*'.	
Output	*Decrease percentage*
Combustion Fan	**P61**
Auger	**P62**
Combustion Fan 2 (if present)	**P63**
Heating Fan (if present)	**P64**
Duct Fan (if present)	**P65**
Duct Fan 2 (if present)	**P66**
If a parameter has been set to zero, the related output shall not work in Soft Mode. If **P61** or **P62** are different from zero, the primary air regulator shall be disabled.	

7 System Menu Parametrization (TPAr)

7.1 Auger's Menu (TP01)

In case of Encoder version (parameter **P81** = 1, 2) values are in RPM, in case of no encoder version (**P81** = 0) in seconds. The Auger On times can be set with steps of 0.1 seconds, the speed with steps of 10 RPM. Set and/or calculated values are automatically defined within 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	[%]	
P18 *	Auger Speed in Pause/Work in PWM and DAC mode	1	100	[%]	
P19	Output management of the Auger in PWM and DAC operation; 0 = always supplied; 1 = supplied in pause-work	0	1	[nr]	
P27	Auger On Minimum Time	0	60	[s]	
	Auger Minimum Speed	200	3000	[RPM]	
P35	Number of pulses per revolution	1	10	[nr]	
P57 *	Maximum time Auger On reachable	0	60	[s]	
	Maximum Auger Speed capability	0	3000	[RPM]	
P62	Percentage of decrease of the Auger Speed/On time compared to the values of power 5 if the function Soft mode is on	0	100	[%]	

P81	Auger Management: 0 **=** without Encoder, 1 = with Encoder, 2 = with auto Encoder.
	• In case of **P81** = 2 the system involves the use of encoder. If the regulation fails, or there is a lack of the encoder signal, the system goes into block with error **Er47**/**Er48**. If, resetting the alarm, the system goes into Block with error **Er47**, it will restart in modality **P81** = 0.
	• In case of **P81** = 0 and Auger in PWM or DAC mode:
	  ○ The Auger speed is **P18**
	  ○ If **P19** = 0 the Auger output is always supplied, otherwise it is supplied in pause-work
		0	2	[nr]	

P93	Percentage variation of Auger speed/On time during the Periodic Cleaning	-100	100	[%]	
P109	Auger's speed/time on percentage change if there is domestic hot water request	-100	100	[%]	
P111	Maximum amount of pellet the stove may contain	0	9000	[Kg]	
P112	Amount of pellet used in 10 minutes with the auger at half of its maximum speed (**P05**). To calculate the value, use the function '*Loading Test*'.	1	9999	[g]	
P118	Auger Off time in Unlock function	1	60	[s]	
P193 *	Percentage variation of Auger speed/On time during the Periodic Cleaning	-100	100	[%]	

***It changes with the combustion recipes

7.2 Combustion Fan Menu (TP02)

Combustion fan speed setting for each operating power/phase. In case of Encoder version (parameter **P25** = 1, 2) values are expressed in RPM, in case of no encoder version (**P25** = 0) in percentage. Set and/or 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 1 Speed	**P14**	**P30**	[V]/[RPM]	
V04 *	Power 2 Speed	**P14**	**P30**	[V]/[RPM]	
V05 *	Power 3 Speed	**P14**	**P30**	[V]/[RPM]	
V06 *	Power 4 Speed	**P14**	**P30**	[V]/[RPM]	
V07 *	Power 5 Speed	**P14**	**P30**	[V]/[RPM]	
V08 *	Power 6 Speed	**P14**	**P30**	[V]/[RPM]	
V09 *	Extinguishing Speed	**P14**	**P30**	[V]/[RPM]	
V10 *	Second Ignition Speed	**P14**	**P30**	[V]/[RPM]	
V11 *	Speed in Modulation	**P14**	**P30**	[V]/[RPM]	
V12 *	Standby Power	**P14**	**P30**	[V]/[RPM]	
V24 *	Ignition-Preheating Speed	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 auto Encoder. In case of **P25** = 2 the system works with encoder management. In case of failed regulation, or lack of 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 per revolution	1	10	[nr]	
P30	Maximum Speed Combustion Fan	0	230	[V]	
		300	2800	[RPM]	
P61	Decrease percentage of the Combustion Fan speed compared to the values of power 5 if the Soft mode is On	0	100	[%]	
P92	Percentage variation of the Combustion Fan speed during the Periodic Cleaning	-100	101	[%]	
P108	Combustion Fan's speed percentage change if there is sanitary water request	-100	100	[%]	
P192 *	Percentage variation of the Combustion Fan speed during the Periodic Cleaning	-100	101	[%]	

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 1 Speed		0	230	[V]	
F02	Power 2 Speed		0	230	[V]	
F03	Power 3 Speed		0	230	[V]	
F04	Power 4 Speed		0	230	[V]	
F05	Power 5 Speed		0	230	[V]	
F06	Power 6 Speed		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]	
P64	Decrease percentage of the Heating fan speed compared to the values of power 5 if the Soft mode is On		0	100	[%]	
P95	Minimum settable Heating Power		0	1	[nr]	
A04	Heating mode: 0 = manual/automatic; 1 = automatic only		0	1	[nr]	
Th05	Heating Fan Activation	Exhaust Flue Gas	5	900	[°C]	
D04	Exhaust flue gas temperature variation 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 Fan (**P06** = 3)		3	30	[°C]	
T69	Delay on the activation at the maximum speed of the Heating Fan if exhaust flue gas temperature > thermostat **Th07**		0	900	[s]	
T96	Delay time changing heating power (used only if the power decreases)		0	900	[s]	

7.4 Thermostats Menu (TP04)

Code	Description	Probe	Min	Max	U	Def.
Th01	Stove Off	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	Switch from Stabilization to Variable phase	Exhaust Flue Gas	5	900	[°C]	
Th07	Modulation for Exhaust flue gas Over-temperature	Exhaust Flue Gas	5	900	[°C]	
Th08	Safety for Exhaust flue gas Over-temperature	Exhaust Flue Gas	5	900	[°C]	
Th09	Ignition Bypass	Exhaust Flue Gas	5	900	[°C]	
Th18	Anti-Freeze Thermostat	Boiler	5	10	[°C]	
Th19	Thermostat activation Pump P1	Boiler	20	110	[°C]	
Th20	DHW Thermostat 1	Boiler	20	110	[°C]	
Th21	DHW Thermostat 2	Boiler	20	110	[°C]	
Th25	Boiler safety thermostat	Boiler	20	110	[°C]	
Th26	Boiler Thermostat minimum Range	Boiler	20	110	[°C]	
Th27	Boiler Thermostat maximum Range	Boiler	20	110	[°C]	
Th28	Stove Off in Standby	Exhaust Flue Gas	5	900	[°C]	
Th35**	Extinguishing thermostat for Power 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 Probe/Buffer tank minimum thermostat	DHW/Buffer tank	20	110	[°C]	
Th52	DHW Probe/Buffer tank maximum thermostat	DHW/Buffer tank	20	110	[°C]	
Th56	Output under Thermostat activation Thermostat	Boiler	20	110	[°C]	
Th57	Boiler Probe – DHW Probe/Buffer tank differential	Differential	1	30	[°C]	
Th59	Thermostat activation Pump P2 (only if **P26** = 4)	DHW/Buffer tank	20	110	[°C]	
Th78	Buffer tank safety thermostat	DHW/Buffer tank	20	110	[°C]	
Ih19	Hysteresis of the P1 Pump activation thermostat	Boiler	1	20	[°C]	
Ih21	Hysteresis of the DHW Thermostat 2	Boiler	1	20	[°C]	
Ih24	Hysteresis of the Boiler Thermostat	Boiler	1	20	[°C]	
Ih33	Room Thermostat Hysteresis	Local Room	0	10	[°C]	
Ih56	Hysteresis of the Thermostat **Th56**	Boiler	1	20	[°C]	
Ih57	Hysteresis of the Differential Thermostat	Differential	1	5	[°C]	
Ih58	Hysteresis of the DHW Thermostat/Buffer tank	DHW/Buffer tank	1	20	[°C]	
Ih59	Hysteresis of the P2 Pump activation Thermostat (only if **P26** = 4)	DHW/Buffer tank	1	20	[°C]	
D01	Exhaust flue gas temperature increasing Delta in Stabilization	Exhaust Flue Gas	0	100	[°C]	

D08	Water temperature Delta for automatic combustion regulation	Boiler	1	30	[°C]	
D23	Delta to sum to Boiler Thermostat to go from Modulation to Standby at the running time **T43** if **A13** = 1	Boiler	0	50	[°C]	
D41	Ignition Delta	Exhaust Flue Gas	0	100	[°C]	
SP01	Minimum threshold of water pressure in the boiler	Pressure S.	50	4000	[mbar]	
SP08	Maximum threshold of water pressure in the boiler	Pressure S.	50	4000	[mbar]	
** Settings for each combustion phase/power of the exhaust flue gas temperature under which, after the Pre-extinguishing waiting time **T14**, the stove goes into Extinguishing for lack of flame. These values intervene in addition to the control of the thermostat. **Th03**,						

7.5 Timers Menu (TP05)

Code	Description	Min	Max	U	Def.
T01	Duration time of Ignition Cleaning	0	900	[s]	
T02	Igniter Pre-heating duration time in Ignition	0	900	[s]	
T03	Pre-loading duration time in Ignition	0	900	[s]	
T04	Fixed Ignition duration time in Ignition	0	3600	[s]	
T05	Variable Ignition duration time in Ignition	0	3600	[s]	
T06	Stabilization duration time in Ignition	0	900	[s]	
T07	Interval of Periodic Cleaning repetition	5	600	[min]	
T08	Periodic Cleaning duration time	0	900	[s]	
T09	Delay time for AT1 Safety intervention	1	900	[s]	
T10	Delay time for AT2 Safety intervention (pressure switch)	1	900	[s]	
T11	Delay time to exit Standby	0	900	[s]	
T13	Minimum duration time of the Extinguishing Phase	0	900	[s]	
T14	Pre-Extinguishing for lack of flame Waiting time	0	900	[s]	
T15	Waiting time for Extinguishing in Safety	0	900	[s]	
T16	Final Cleaning duration time	0	900	[s]	
T17	Delay time combustion power change	0	900	[s]	
T18	Delay time combustion power change exiting Ignition	0	900	[s]	
T22	Delay in Standby output	0	900	[s]	
T23	Timer for fuel tank loading	0	3600	[s]	
T24	Duration time of the lack of fuel report, if an output has been set as Pellet Loading Motor or duration of the fuel loading check, if the Pellet Loading Motor is not included	0	3600	[s]	
T27	Delay time for Auger 2deactivation	1	900	[s]	
T29	Pre-loading 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	Auger working time if there is backdraft	0	3600	[s]	
T40	Delay time for the Auger activation if there is a Pellet Safety Valve	0	900	[s]	
T41	Work time of the Pump P1 if **T42** expired	0	3600	[s]	
T42	Maximum idle time of Pump P1 and Electro valve	1	1500	[hours]	
T43	Period after which the system switches from Modulation to Standby if boiler temperature > (Boiler Thermostat + **D23**) and **A13** = 1	0	3600	[s]	
T46	Electro valve working time if **T42** expired	0	3600	[s]	
T50	Auger feeding time at the end of the Extinguishing	0	900	[s]	
T57 *	Minimum duration time of the Standby Phase	0	900	[s]	
T66	System operating hours before it goes into Service Block'	0	9999	[hours]	
T67	System operating hours before the message *'Cleaning' is shown*	0	9999	[hours]	
T68	Delay time to restore the original value of the Boiler Thermostat in case of ceased DHW demand	0	900	[s]	
T84*	Working time before the system goes into automatic Extinguishing	1	9600	[min]	
T85	Maximum time for the opening of the Cleaning Motor limit switch	1	60	[s]	
T86	Cleaning Motor work in Extinguishing, Recovery Ignition and Standby	0	9600	[s]	
T87 *	Cleaning Motor Pause time	1	900	[min]	

T88	Maximum time of voltage supply lack for the system to go back into its previous state	10	900	[s]	
T89	Maximum time of voltage supply lack for the system to go back into Recovery Ignition	1	1400	[min]	
T92	Door opening time before the system goes into Block	1	900	[s]	
T99	Return time/End of the cycle of the Cleaning Motor	0	9600	[s]	
T118	Duration of the Extinguishing phase in Recovery Ignition in case of 'Automatic Extinguishing 'if **A40** = 2	1	900	[s]	
T122	P1 Pump working time in on-off mode	0	900	[s]	
T123	P1 Pump pause time in on-off mode	1	900	[min]	
T141	Cleaning Motor Work on Run Mode for Power 1	0	9600	[s]	
T142	Cleaning Motor Work on Run Mode for Power 2	0	9600	[s]	
T143	Cleaning Motor Work on Run Mode for Power 3	0	9600	[s]	
T144	Cleaning Motor Work on Run Mode for Power 4	0	9600	[s]	
T145	Cleaning Motor Work on Run Mode for Power 5	0	9600	[s]	
T146	Cleaning Motor Work on Run Mode for Power 6	0	9600	[s]	
T147	Cleaning Motor Work on Modulation	0	9600	[s]	
T148	Cleaning Motor Work on Safety	0	9600	[s]	
T201 *	Delay time to start Periodic Cleaning if performed for the first time since the entry in Run Mode (if **A62** = 1)	0	900	[min]	
T202 *	Periodic cleaning cycle (if **A62** = 1)	0	900	[min]	
T203 *	Periodic cleaning duration for power 1 (if **A62** = 1)	0	900	[s]	
T204 *	Periodic cleaning duration for power 2 (if **A62** = 1)	0	900	[s]	
T205 *	Periodic cleaning duration for power 3 (if **A62** = 1)	0	900	[s]	
T206 *	Periodic cleaning duration for power 4 (if **A62** = 1)	0	900	[s]	
T207 *	Periodic cleaning duration for power 5 (if **A62** = 1)	0	900	[s]	
T208 *	Periodic cleaning duration for power 6 (if **A62** = 1)	0	900	[s]	
T211 *	Periodic cleaning duration for Modulation power (if **A62** = 1)	0	900	[s]	
* it changes with the combustion recipes					

7.6 Settings Menu (TP08)

Settings of the general functions of the system.					
Code	**Description**	**Min**	**Max**	**U**	**Def.**
A01	Room Thermostat/Probe: 0 = Ignition/Extinguishing; 1 = Run Mode/Modulation; 2=Run Mode/Standby; 3=plant pump block up to the thermostat **Th21** or **Th78** (if **P26** = 4); 4=Run Mode/Standby and pump block until the thermostat **Th21** or **Th78** is reached (if **P26** = 4); 5=Heating Fan off or on power 1	0	5	[nr]	
A10	Ignition Command from the Extinguishing: 0=it places the system in Recovery Ignition; 1=it places the system in Check Up	0	1	[nr]	
A13	System Management for Boiler Thermostat satisfied: 0 = the system goes into Modulation; 1 = before the system goes in Modulation and after, if boiler temperature > (Boiler Thermostat + **D23**), goes in Standby; 2 = in winter the system goes into Modulation, in summer the system goes into Modulation and then, if the boiler temperature>(Boiler Thermostat+**D23**) into Standby	0	1	[nr]	
A14	Pressure Sensor error management: 0 = disabled, 1 = enabled	0	1	[nr]	
A26	Management to exit from Standby: 0 = immediate, 1 = only upon the expiry of the timer **T13** and if the exhaust flue gas temperature < **Th28**	0	1	[nr]	
A27	Standby mode management: 0 = the system carries out the brazier extinguishing; 1 = he system carries out the brazier maintenance	0	1	[nr]	
A28	Management Auger Brake: 0 = not enabled; 1 = enabled	0	1	[nr]	
A29	Management of the system in Standby for Room Thermostat and domestic hot water demand: 0 = it remains in Standby; 1 = it exits Standby	0	1	[nr]	
A40	Management of the 'Automatic Extinguishing' function	0	2	[nr]	
A45	Standby Management for hydraulic plants 0 and 1 and Summer Mode and no DHW demand : 0 = the system does not go into Standby; 1 = the system goes into Standby	0	1	[nr]	
A48	Management of the key **P3** or **K5** from the control panel for the Pellet Manual Charge: 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	Management lack of net supply voltage: 0 = system in Block with **Er15** if there was no supply voltage for more than **T89** minutes; 1 = system in Recovery Ignition if there was no voltage supply for more than **T89** minutes	0	1	[nr]	
A61	Periodical Cleaning Management: 0 = enabled only if in Run Mode, 1=also enabled in Modulation	0	1	[nr]	
A62	Enable Periodic Cleaning management with parameters per recipe	0	1	[nr]	
A64	Fan and Auger calibration management: 0 = disabled; 1 = enabled	0	1	[nr]	
A99	Enable Glow plug ***ignition*** Step management for 20 seconds. Set to '**1**' **only** in case of Triac output.	0	1	[nr]	
P02	Maximum number of attempted Ignition	1	5	[nr]	
P03	Number of working combustion powers	1	6	[nr]	
P04	Number of recipes shown to the user	1	4	[nr]	
P08	Combustion recipe in use (if **P04** is different from 1, the maximum settable value is **P04**)	1	4	[nr]	
P09	Pellet Level Sensor Configuration: 0 = sensor input N.C.; 1 **=** sensor input N.O.; 2 **=** sensor input N.C. and the system doesn't go into Block in case of lack of pellet in the tank; 3 **=** sensor input N.O. and the system doesn't go into Block in case of lack of pellet in the tank.	0	3	[nr]	
P12	Refill function with error for pellet level under the 10% threshold 0 = error disabled, 1 = error enable	0	1	[nr]	
P20	Pressure Sensor Selection	0	2	[nr]	
P26	Hydraulic Plant Configuration	0	6	[nr]	
P44	Output V2 configuration	0	44	[nr]	
P49	Cleaning Motor cleaning cycles when up to speed.	0	100	[nr]	
P50	Cleaning Motor cycles in brazier Extinguishing	0	100	[nr]	
P72	Increase percentage of the Auger 2 working time set in pause work, compared to the Auger	0	500	[%]	
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	'System 1 Maintenance' Management: 0 = the system does not go into Block when exceeding **T66**, 1 = the system goes into Block when exceeding **T66**	0	1	[nr]	
P91	Flow switch configuration: 0 = NC sensor input; 1 = NO sensor input)	0	1	[nr]	
P100	Loading Motor Management in Night mode: 0 = normal operation; 1 = Off	0	1	[nr]	
P103	Cleaning Motor Management in Night mode: 0 = normal operation; 1 = Off	0	1	[nr]	
P140	Management of PW1 output: 0 = PWM 5V; 1 = PWM 10V; 2 = DAC 5V; 3 = DAC 10V	0	3	[nr]	
P141	Management of PW2 output: 0 = PWM 5V; 1 = PWM 10V; 2 = DAC 5V; 3 = DAC 10V	0	3	[nr]	
P142	Output PW1 configuration	0	4	[nr]	
P143	Output PW2 configuration	0	4	[nr]	
* It changes with the combustion recipes					

7.7 Counters Menu (TP11)

LCD and K100 panels menu is formed by 2 submenus, Counters and Error List. CP and K400 panels menu is only formed by the Counters menu.

Counters		
Code		**Description**
LCD and K	*CP*	
Ignitions *	**Co04**	Number of attempted Ignitions
Failed Ign. *	**Co05**	Number of failed Ignitions

Working hours*	**Co03**	Hour of heating effectively produced in Run Mode, Modulation and Safety	Hundreds of Hours 0002 3757 Hours Minutes
Counter Reset	**rES**	Reset of all the counters: turn to zero all counters	
Service Reset	**rSUC**	This menu allows you to reset the function 'Maintenance 1 System'	

Through the parameter '*Counters Reset menu management* 'in the menu Settings of the software, you can able the display of the menu Counters Reset (parameter set to 0), or disable it (parameter set to 1).

***** Only for K100 and LCD100 panels

Errors List
The menu shows the last 10 errors occurred; each line displays the error code and time and date when the error occurred. To delete the list, enter the Counters Reset Menu.

7.8 Outputs Test Menu (TP12)

Allows to test the functioning of each output with the connected charges: it is available only in Off.

Code		Description	Min	Max	U	Def.
LCD and K	*CP*					
Combustion Fan	**To03**	Combustion Fan Test	0	230	[V]	
			300	2800	[RPM]	
V2 Output	**To22**	Output V2 test	0	230	[V]	
			Off	On	-	
Pump	**To05**	Output Pump Test	Off	On	-	
Auger	**To01**	Auger Motor Test	Off	On	-	
			200	3000	[RPM]	
Igniter	**To04**	Igniter Output Test	Off	On	-	
PW1 Output	**PU1**	PW1 Output Test	0	100	[%]	
PW2 Output	**PU2**	PW2 Output Test	0	100	[%]	

During the Fans test you can show the value set [V]/ [RPM] and the number of spins[RPM] detected by the encoder (if there is one): this allows to create conversion table [RPM]/[V] for going from Fan with encoder to Fan without encoder in case of encoder is broken.
During the encoder Auger test the display shows the set value [RPM] and the number of revolutions [RPM] detected by the encoder. If the Auger has no encoder, the test is performed only in ON/OFF

7.9 Primary Air Regulator Menu (TP16)

Menu for the setting of the values of the combustion air flow regulator.

Settings

Code	Description	Min	Max	U	Def.
A24	Regulator management: 0 = disabled, 1 = regulation Fan Comburent, 2 = regulation Fan Comburent + Auger, 3 = regulation Auger, 4 = regulation Auger + Comburent Fan	0	4	[nr]	
A25	Regulation error management: 0 = the system does nothing, 1 = the system resets the regulator and starts a new regulation, 2 = the system disables the regulator , 3 = the system goes into Block with error **Er17**; 4 = the system goes into Recovery Ignition and resets the regulator	0	4	[nr]	
A31	Failed regulation management: 0 = the regulator always returns to the first output, 1 = the regulator remains on the last regulated output	0	1	[nr]	
A33	Auger management in Run Mode and Modulation if the air flow is lower than **FL19**: 0 = Auger stopped, 1 = Auger at **P27**	0	1	[nr]	
A34	Loading, when switching on, of theAuger and Fan default values	0	1	[nr]	
A35	Regulator activated in Fixed Ignition, Variable Ignition and Stabilization	0	1	[nr]	
P148 *	Deviation percentage from the set value of the 'ON' time, or of the Auger speed for the calculation of the minimum and maximum range for the Auger regulation	0	100	[%]	
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]	

T93	Waiting time for the flow to exceed the threshold **FL19** + **FL49**	0	900	[s]	
V26	Combustion fan speed in Run Mode and Modulation if primary air flow < **FL19**	0	230	[V]	
		300	2800	[RPM]	
VA26	Combustion fan 2 speed in Run Mode and Modulation if primary air flow < **FL19**	0	230	[V]	
V60	Fan Regulation Step	2	100	[V]	
		10	500	[RPM]	
C60	Auger Regulation Step	0,1	20	[s]	
		10	500	[RPM]	

Flow Set

Code	Description	Min	Max	U	Def.
FL19	Minimum Air for Run Mode and Modulation	0	2000		
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		
FL31	Air Flow Set in Variable and Fixed Ignition	0	2000		
FL32	Air Flow Set in Stabilization	0	2000		
FL33	Air Flow Set in second Ignition	0	2000		
FL40	Maximum Flow	0	2000		

Delta

Code	Description	Min	Max	U	Def.
FL49	Air Flow Delta to add to **FL19**	0	2000		
FL52	Air Flow Variation Delta for Power 1	0	100	[%]	
FL53	Air Flow Variation Delta for Power 2	0	100	[%]	
FL54	Air Flow Variation Delta for Power 3	0	100	[%]	
FL55	Air Flow Variation Delta for Power 4	0	100	[%]	
FL56	Air Flow Variation Delta for Power 5	0	100	[%]	
FL57	Air Flow Variation Delta for Power 6	0	100	[%]	
FL60	Delta of the Air Flow variation for Modulation	0	100	[%]	
FL61	Delta of the Air Flow variation in Fixed and Variable Ignition	0	100	[%]	
FL62	Air Flow Variation Delta in Stabilization	0	100	[%]	
FL63	Air Flow Variation Delta in second Ignition	0	100	[%]	

***** It changes with the combustion recipes and with the type of Auger used

7.10 Combustion Fan Menu 2 (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 1 Speed	0	230	[V]	
VA04*	Power 2 Speed	0	230	[V]	
VA05*	Power 3 Speed	0	230	[V]	
VA06*	Power 4 Speed	0	230	[V]	
VA07*	Power 5 Speed	0	230	[V]	
VA08*	Power Speed 6	0	230	[V]	
VA09*	Extinguishing Speed	0	230	[V]	
VA10*	Second Ignition Speed	0	230	[V]	
VA11*	Speed in Modulation	0	230	[V]	
VA12*	Standby Power	0	230	[V]	
VA22	Speed with Door open	0	230	[V]	
VA24*	Speed in Ignition Pre-heating	0	230	[V]	
P63	Decrease percentage of the Combustion Fan 2 speed compared with the values of power 5 if the Soft mode is On	0	100	[%]	

***** It changes with the combustion recipes

7.11 Restore Default Value Menu (TP26)

This menu allows restoring the factory set value of the parameters used by the system.
To use it, from software, the parameter ' Restore default values management' must be set to *1* .