EasyTech.Full

Temperature Controller for Pellet Stove

Idro

EasyTech.One is a Pellet stoves control system available in Air and Hydro version.
Is characterised by:

- Installing and use simplicity
- Simple and direct user's functions
- Reliable and flexible functioning software with well-established TiEmme elettronica technology
- Advanced functions available for the builder to adapt to different stoves and installations

Product composition:

- Control Board with 4 fixing points, solid and sure.
- Extractable connectors
- Exhausting Temperature Probe until 500 °C
- Room Temperature Probe
- Boiler Probe
- Connection cable Main Board - Control Panel
- Control Panel with antistatic cover
- Connector RS232 for the Modem/Computer connection

Safety rules

Before working on the system make follow:

- The accident prevention and Room prevention rules
- The National Institute rules against the work accidents
- The legal safety rules

CE

Conformity declaration

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

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

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

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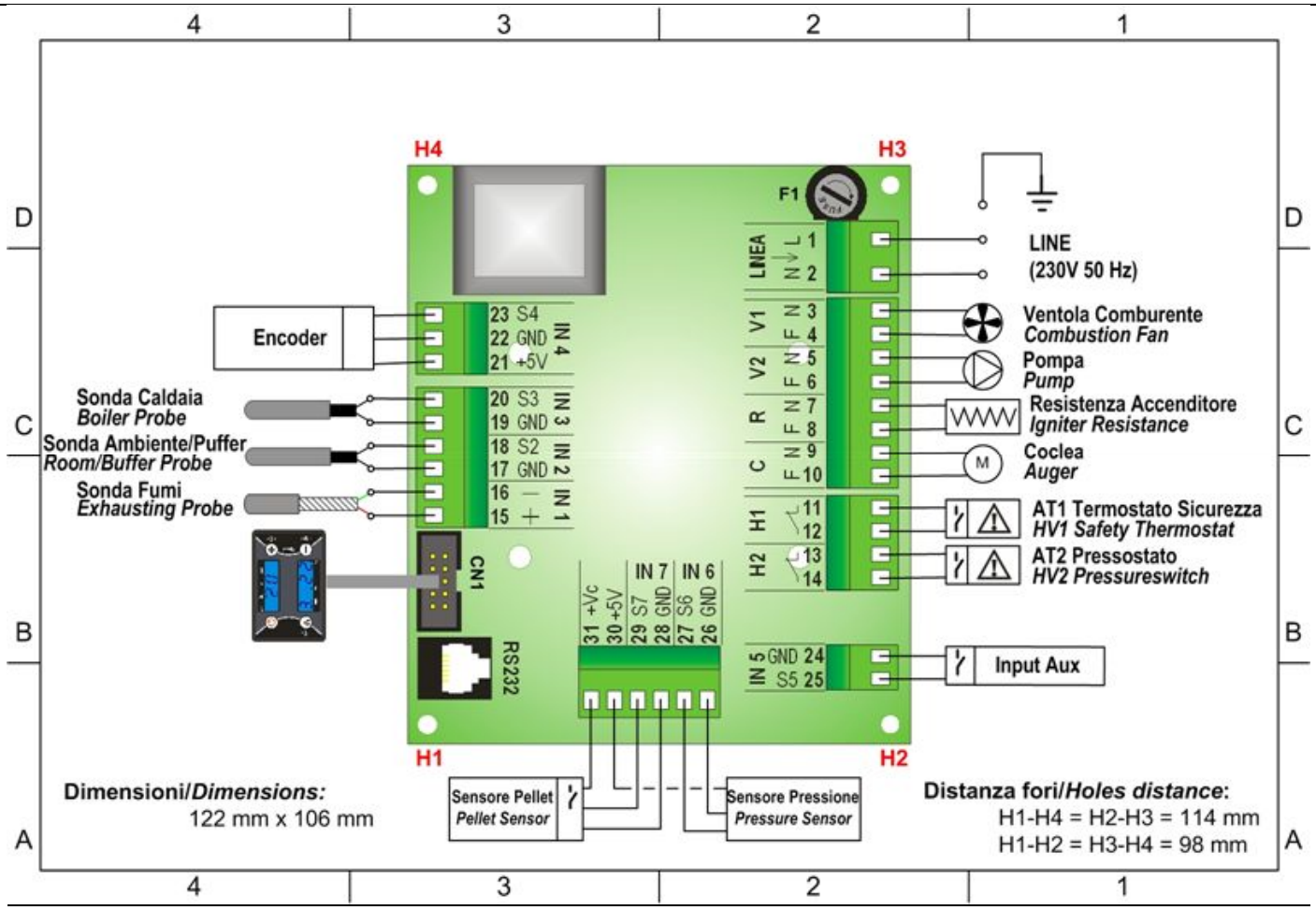
1 Connections

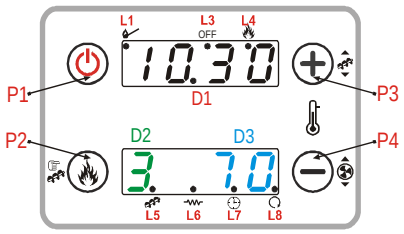


PIN		Function	Characteristics
1	N	Voltage Power Supply	230 Vac ± 10% 50/60 Hz **F1**= Fuse T5,0 A
2	L		
3	N	Combustion Fan	Triac Regulation 1A max
4	L		
5	N	Pump	Triac Regulation 1A max
6	L		
7	N	Igniter Resistance	Relè 3 A max
8	L		
9	N	Auger Pellet Engine	Triac Regulation 1A max
10	L		
11		Safety Thermostat Input HV1	Contact ON/OFF Normally closed To Bypass if not used
12			
13		Safety PressureSwitch Input HV2	Contact ON/OFF Normally closed To Bypass if not used
14			
15	Red+	Exhausting Temperature Probe	Thermocouple K: 500 °C Max
16	Green –		
17		Probe or Room Thermostat / Buffer Probe	NTC 10K @25 °C: 80 °C Max
18			
19		Boiler Temperature Probe	NTC 10K @25 °C: 120 °C Max
20			
21	+5V	Encoder Signal	Signal TTL 0 / 5 V
22	GND		
23	SEG		
24		AUX Input: Chrono/Room Thermostat	Contact ON/OFF
25			
26	GND	Pressure Water Sensor	Analog Signal
27	SEG		
30	+5V		
28	GND	Level Pellet Sensor	Signal 0 / 5 V
29	SEG		
31	+V		
CN1		Connector to Keyboard	Flat Cable
RS23		Connector RS232	Connection to Modem/Computer

2 Control Panel: Use and Functions

2.1 Led / Display

Led	Fix	Blinking
L1	Stabilization phase	Ignition Start phase
L3	Stove OFF	Extinguishing phase
L4	Work phase	Modulation/Standby phase
L5	Engine Auger ON	
L6	Igniter Resistance ON	
L7	Chrono Program enabled	
L8	Pump ON	
D1	Time	
D2	Work Combustion Power set	Combustion power change
D3	Boiler Thermostat set	Boiler Thermostat change



2.2 Buttons

Tasto	Click [P click]	Long Pressure [P long]
P1	Display other data	Ignition/Extinguishing /Block Reset
P2	Combustion Power Setting	Manual Pellet Loading
P3	Thermostat Setting (+)	Pellet Loading Correction
P4	Thermostat Setting (-)	Combustion Fan Speed Correction

2.3 Alarms

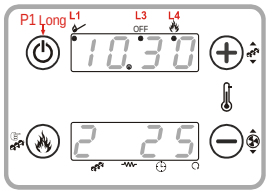
DESCRIPTION		Error Code
Safety Thermostat HV1: signalled also in case of Stove OFF	**Block** ALt	Er01
Safety PressureSwitch HV2: signalled with Combustion Fan ON	**Block** ALt	Er02
Extinguishing for Exhausting Temperature lowering	**Block** ALt	Er03
Extinguishing for Exhausting over Temperature	**Block** ALt	Er05
Encoder Error: No Encoder Signal (in case of **P25=1** or **2**)	**Block** ALt	Er07
Encoder Error: Combustion Fan regulation failed (in case of **P25=1** or **2**)	**Block** ALt	Er08
Failed Ignition	**Block** ALt	Er 12
Lack of Voltage Supply	**Block** ALt	Er 15
Lack of fuel	**Block** ALt	Er 18
DAY and TIME not correct due to prolonged absence of Power Supply	**Block** ALt	Er 11
Anomaly in probe control during Check Up phase		SOnd
Extinguishing for water over Temperature	**Block** ALt	Er04
Low pressure in to the Boiler	**Block** ALt	Er09
High pressure in to the Boiler	**Block** ALt	Er 10

The reset of the **BLOCK** Condition is done by the Long Pressure of the button **P1**

3 User Menu (1)

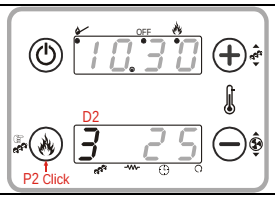
3.1 Ignition/Exstinguishing

The Ignition and the Extinguishing are activated with a long pushing of the button **P1**
The Ignition is signalled by the first blinking than fix led **L1**
The Work state is signalled by the fix led **L4**
The Modulation state is signalled by the blinking **L4**
The Extinguishing is signalled by the blinking led **L3,**
The Extinguishing finished =OFF state is signalled by the fix led **L3**



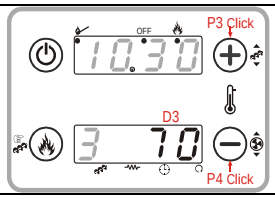
3.2 Combustion Power Setting

Click button **P2:** the display **D2** blinks
With other click of the button **P2** the power is changed according to the values
Ex**.: 1 – 2 – 3 – 4 – 5 – A** (**A**= Automatic Combustion)
After 3 seconds the new value is memorised and the display shows as normal



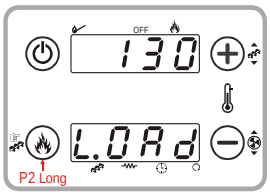
3.3 Work Thermostat Setting

Click button **P3** or **P4**: the display **D3** blinks
With other click of the buttons **P3 / P4** the value of the thermostat is increased or decreased
After 3 seconds the new value is memorised and the display shows as normal



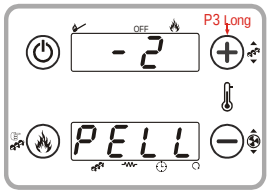
3.4 Manual Pellet Loading

The long pressure of button **P2** activates the Pellet Manual Loading with activation of Auger engine in continuous way. The bottom display shows the actual function
The up display shows the passed loading time
To stop the loading push any button
The loading stops automatically after 300 seconds



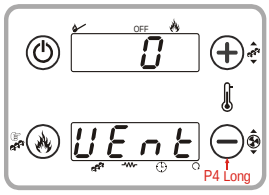
3.5 Pellet Loading Correction

The activation is with a long pushing of the button **P3**
The bottom display shows **PELL**
The Display **D1** shows the blinking value
With buttons **P3 / P4** the blinking value increases or decreases
The values are between the range **– 7 ÷ 7**. The default value is '**0**'
After 3 seconds the new value is memorised and the display shows as normal



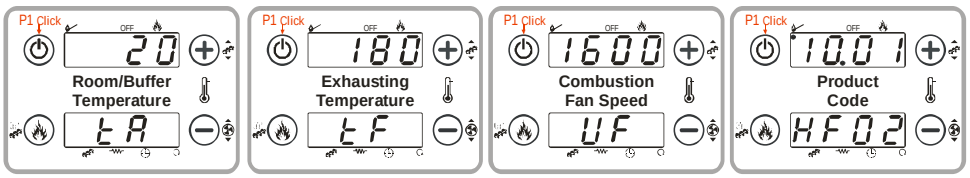
3.6 Combustion Fan Speed Correction

The activation is with a long pushing of the button **P2**
The bottom display shows **UEnt**
The Display **D1** shows the blinking value
With buttons **P3 / P4** the blinking value increases or decreases
The values are between the range **– 7 ÷ 7**. The default value is '**0**'
After 3 seconds the new value is memorised and the display shows as normal



3.7 Display

The activation is with a click of **P1.**
tA = Room / Buffer Temperature
tF = Exhausting Temperature
UF= Combustion Fan Speed [RPM/Volt]]
HF02+Product Code



3.8 Radio Remote Control

The button **1** activates the Extinguishing ; the button **2** activates the Ignition
The buttons **3** / **4** decrease / increase the Power Combustion

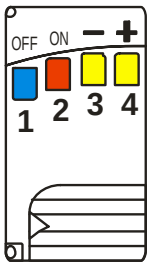
Code Change:

On the Remote Control:

- Open the battery box moving right the cover
- Modify dip-switch's configuration and close the box

On the Thermoregulator:

- Switch OFF the power supply (230 Vac)
- Switch ON the Power Supply pressing at the same time one button on the Remote Control waiting about 5 seconds until an acoustic signal is emitted confirming the code learned



4 User Menu (2)

Push contemporary the buttons **P2** and **P4** for three seconds to enter into User Menu (2)

- To scroll the Menu — push the buttons **P3** or **P4**
- To enter in a submenu — push the button **P2**
- To modify the blinking value — push the button **P3** (to increase) or **P4** (to decrease)
- To exit — push the button **P1**

4.1 Thermostats

tErM

4.1.1 Room/Buffer Thermostat

It allows to set the Room Thermostat value — **P26=0** and **A19 =1**
Or the Buffer Thermostat — **P26=1**

4.2 Chrono

It allows to program the ignitions/extinguishing of the system

CrOn

4.2.1 Enable

It enables the Programming set.
Push the button **P2** to enter
Push the buttons **P3/P4** for select
ON= enable programming set **OFF**=disable programming set
To confirm, push the button **P2**, or push **P1** to esc

EnAb

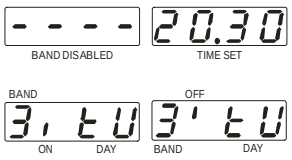
4.2.2 Program

It allows to schedule the 3 time bands available for every day of the week
Select PrOG
Push the button **P2** to enter
Use the buttons **P3/P4** to visualize the time bands set:

- The upper display visualizes — the TIME SET
  - - - - if the BAND is disabled
- The bottom display visualizes: — DAY / BAND / ON/OFF

The long pressure of the button **P1** Enables / Disables the selected time band

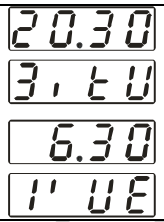
PrOG



PROGRAMMING AROUND MIDNIGHT

- Set the hour of **On** for the previous day to the wanted value: Example 20.30
- Set the hour of **OFF** for the previous day at: **23:59**
- Set the hour of **On** for the next day at **00:00**
- Set the hour of **OFF** for the next day to the wanted value: Example 6:30

The system will turn on Tuesday, at 20.30, and will turn off on Wednesday, at 6.30.



4.3 Time and Date

dAtE

It allows to set the current day and time

4.4 Radio Remote Control

tELE

ON= Enabled **OFF= Disabled**

5 Installer's Menu

TPAr

Push contemporary the buttons **P2**+**P4** and choose **TPAr** to enter in the installer menu protected by password

5.1 Auger Menu

TP01

Setting of the **Auger TimeON** defined for each phase/power in the **Auger Period P05**

If a value is set = **0** the Auger is desabled for the corresponding Power/Phase
If a value is set ≥ **P05** the Auger works continuously for the corresponding Power/Phase
The TimeON regulation is settable as steps of 0.1 seconds
The set or calculated values are automatically limited in the threshold **P05** and **P27**

Code	Description	Min	Max	U	Def.
C01	Auger TimeON Ignition	0	60	[s]	
C02	Auger TimeON Stabilization	0	60	[s]	
C03	Auger TimeON Power 1	P27	60	[s]	
C04	Auger TimeON Power 2	P27	60	[s]	
C05	Auger TimeON Power 3	P27	60	[s]	
C06	Auger TimeON Power 4	P27	60	[s]	
C07	Auger TimeON Power 5	P27	60	[s]	
C08	Auger TimeON during Periodic Cleaning	0	60	[s]	
C10	Auger TimeON Second Ignition	0	60	[s]	
C11	Auger TimeON Modulation	P27	60	[s]	
P05	Total Time Auger Period	4	60	[s]	
P15	Correction Step value of the value Auger TimeON	1	20	[%]	
P27	Minimum Auger TimeON	0	60	[s]	

5.2 Combustion Fan Menu

TP02

Setting of the Combustion fan speed for each power/phase of functioning.

P25=**1: Encoder version** >values are in RPM; **P25**=0**:** No Encoder version >values are in VOLT
The set or calculated values are automatically delimited between in the thresholds **P14** and **P30**

Code	Description	Min	Max	U	Def.
U01	Ignition Speed	0	230	Volt	
		300	2800	RPM	
U02	Stabilization Speed	0	230	Volt	
		300	2800	RPM	
U03	Power 1 Speed	0	230	Volt	
		300	2800	RPM	
U04	Power 2 Speed	0	230	Volt	
		300	2800	RPM	
U05	Power 3 Speed	0	230	Volt	
		300	2800	RPM	
U06	Power 4 Speed	0	230	Volt	
		300	2800	RPM	
U07	Power 5 Speed	0	230	Volt	
		300	2800	RPM	
U08	Speed during the Periodic Cleaning	0	230	Volt	
		300	2800	RPM	
U09	Speed during the Extinguishing	0	230	Volt	
		300	2800	RPM	
U10	Second ignition Speed	0	230	Volt	
		300	2800	RPM	
U11	Modulation Speed	0	230	Volt	
		300	2800	RPM	
P14	Combustion Fan Minimum Speed	0	230	Volt	
		300	2800	RPM	
P30	Combustion Fan Maximum Speed	0	230	Volt	
		300	2800	RPM	
P16	Correction Step Value of the Combustion Fan Speed	1	20	[%]	
P25	**0** Combustion Fan no Encoder	0	2	[nr]	
	1 Combustion Fan with Encoder				
	2 Combustion Fan with Encoder whit automatic passage to **P25=0** in case of no signal Encoder: alarm **Er07**				

5.3 Thermostats' Menu — TP04

Code	Description	Probe	Min	Max	U	Def.
Th01	Stove OFF Thermostat	Exhausting	5	900	[°C]	
Th02	Deactivation Igniter Resistance Thermostat	Exhausting	5	900	[°C]	
Th03	Pre-Extinguishing Thermostat for no flame	Exhausting	5	900	[°C]	
Th06	Thermostat to go in Stabilization from Variable phase	Exhausting	5	900	[°C]	
Th07	Modulation Thermostat for Exhausting OverTemperature	Exhausting	5	900	[°C]	
Th08	Safety Thermostat for Exhausting OverTemperature	Exhausting	5	900	[°C]	
Th09	Ignition Bypass Thermostat	Exhausting	5	900	[°C]	
Th18	Antifreeze Thermostat	Boiler	5	10	[°C]	
Th19	Enable Pump Thermostat	Boiler	30	85	[°C]	
Ih19	Enable Pump Thermostat Hysteresis	Boiler	1	20	[°C]	
Th21	Discharge Thermostat (Unblock Pump)	Boiler	30	85	[°C]	
Ih24	Boiler Thermostat Hysteresis	Boiler	1	20	[°C]	
Th25	Boiler Safety Thermostat	Boiler	80	99	[°C]	
Th26	Minimum Range of Boiler Thermostat	Boiler	30	60	[°C]	
Th27	Maximum Range of Boiler Thermostat	Boiler	60	95	[°C]	
Th28	Stove OFF Thermostat in Standby	Exhausting	5	900	[°C]	
Ih33	Room Thermostat Hysteresis	Room	0	10	[°C]	
Th47	[Boiler Probe – Buffer Probe] Differential Thermostat	Buffer	1	30	[°C]	
Ih47	Differential Thermostat Hysteresis	Buffer	1	5	[°C]	
Ih48	Buffer Thermostat Hysteresis	Buffer	1	20	[°C]	
d01	Increasing Delta Temperature in Stabilization	Exhausting	0	100	[°C]	
d08	Delta Water Temperature in the boiler for Combustion Power Automatic Regulation [**A**]	Boiler	1	30	[°C]	
d23	Increasing Delta Water Temperature over the Boiler Thermostat to go from Modulation to Standby, if **A13**=**2**, at the end of **T43**	Boiler	0	50	[°C]	
SP01	Minimum threshold of water pressure in the boiler		50	3000	[°C]	
SP08	Maximum threshold of water pressure in the boiler		50	3000	[°C]	

5.4 Timer Menu — TP05

Code	Description	Min	Max	U	Def.
T01	Ignition: Cleaning Time	0	900	[s]	
T02	Ignition: Igniter Resistance Pre-heating Time	0	900	[s]	
T03	Ignition: Pre-Load Time	0	900	[s]	
T04	Ignition: Fix Time	1	3600	[s]	
T05	Ignition: Variable Time	1	3600	[s]	
T06	Ignition: Stabilization Time	0	900	[s]	
T07	Interval Periodic Cleaning Repetion	15	600	[min]	
T08	Periodic Cleaning Time	0	900	[s]	
T09	Delay time HV1 Safety intervention	1	900	[s]	
T10	Delay time HV2 Safety intervention (Pressureswitch)	1	900	[s]	
T11	Delay time for Standby Exit	0	900	[s]	
T13	Minimum Period Time of Extinguishing	0	900	[s]	
T14	Waiting time Pre-Extinguishing for no flame	0	900	[s]	
T15	Waiting time Pre-Extinguishing in Safety	0	900	[s]	
T16	Final Cleaning Time	0	900	[s]	
T17	Delay time Combustion Power Change	0	900	[s]	
T18	Delay time Combustion Power Change in exit from Ignition	0	900	[s]	
T22	Delay time for Standby Input	0	900	[s]	
T24	Length signalling of fuel lack	0	3600	[s]	
T41	Work time of Pump	0	3600	[s]	
T42	Maximum time of inactivity of Pump	1	9600	[ore]	
T43	Time, after which the stove goes from Modulation to Standby if Water Temperature> [Boiler Thermostat t+**d23**] and **A13**= 1	0	9600	[s]	

5.5 Enable's Menu — TP08

Code		Description	Min	Max	U	Def.
A01 For **P26=0**	**0**	Reached the Room Thermostat the stove goes in Extinguishing	0	3	[nr]	
	1	Reached the Room Thermostat the stove goes in Modulation				
	2	Reached the Room Thermostat the stove goes in Standby				
	3	Reached the Room Thermostat the system blocks the Pump until water temperature < **Th21**				
A06	**0**	In Modulation the system uses Power 1: **C03,U03**	0	1	[nr]	
	1	In Modulation the system uses Modulation Power: **C11,U11**				
A07	**0**	The input AUX is used for ON/OFF functioning	0	3	[nr]	
	1	The input AUX is used for Modulation/Normal functioning				
	2	The input AUX is used for Standby/Normal functioning				
	3	The input AUX is used to block the Pump until water temperature < **Th21** (**P26=0**)				
A13	**0**	Reached the Boiler Thermostat the stove goes in Modulation	0	1	[nr]	
	1	Reached the Boiler Thermostat the stove goes in Modulation, then if **d23** is satisfied and **T43** is finished it goes in Standby				
A14	**0**	Error Sensor Pressure disabled	0	1	[nr]	
	1	Error Sensor Pressure enabled				
A19	**0**	Room Thermostat ON/OFF selected	0	1	[nr]	
	1	Room Probe selected				
A26	**0**	The immediate Exit from StandBy is allowed	0	1	[nr]	
	1	Exit from Standby is allowed >after the timer **T13** and > if the Exhausting Temperature<**Th28**				
A28	**0**	Auger brake not activated	0	1	[nr]	
	1	Auger brake activated				
A50	**0**	Modem Management disabled	0	1	[nr]	
	1	Modem Management enabled				
P02	Maximum number ignition attempts		1	5	[nr]	
P03	Work Combustion Powers' number		1	5	[nr]	
P09	Pellet Sensor configuration: **0**=**N.C.** **1=N.O.**		0	1	[nr]	
P20	Configuration of Pressure Boiler Water Sensor (see section 7.9)		0	2	[nr]	
P26	Plumbing system management (see section 7.10)		0	1	[nr]	

5.6 Outputs Menu Test — TP12

It allows the test of the single management outputs with the connected devices. The function is available in **OFF** state.

Code	Description	Min	Max	U	
To01	Auger Test	Off	On	-	
To03	Combustion Fan Test	0	230	[Volt]	
		300	2800	[RPM]	
During the Combustion Fan Test, the upper display shows the setted value [Volt] o [RPM], the under display shows the RPM of the fan detected by the encoder if is present: so it is possible to create a conversion table [RPM] / [Volt] to use for the passage from encoder Mode **P25=1** to not encoder Mode **P25=0** in case of encoder breakage					
To04	Igniter Resistance Test	Off	On	-	
To05	Pump Test	Off	On	-	

5.7 Extinguishing Thermostats Menu — TP13

Settings for each Combustion Phase/Power of the Exhausting Temperature under which, after the Pre-Extinguishing time **T14**, the stove goes in Extinguishing for no flame. **These values occur with the Th03 Thermostat**

Code	Description	Probe	Min	Max	U	Def.
Th35	Power 1	Exhausting	5	900	[°C]	
Th36	Power 2	Exhausting	5	900	[°C]	
Th37	Power 3	Exhausting	5	900	[°C]	
Th38	Power 4	Exhausting	5	900	[°C]	
Th39	Power 5	Exhausting	5	900	[°C]	
Th40	Modulation Power	Exhausting	5	900	[°C]	
Th43	Power 1	Exhausting	5	900	[°C]	

6 Functioning States

6.1 Off

Timer	Controls		Combustion Fan	Auger	Igniter
	If Exhausting Temp. > **Th01**	→ goes in **Extinguishing**	**OFF**	**OFF**	**OFF**
	If Water Temp.> **Th25**	→ goes in **Block**			

6.2 Check Up

Timer	Controls		Combustion Fan	Auger	Igniter
T01	If Exhausting Temp. > **Th09**	→ goes in **Normal**	**Max Speed**	**OFF**	**OFF**

6.3 Pre-Heating

Timer	Controls		Combustion Fan	Auger	Igniter
T02	If Exhausting Temp. > **Th09**	→ goes in **Normal**	**U01**	**OFF**	**ON**

6.4 Pre-Loading

Timer	Controls		Combustion Fan	Auger	Igniter
T03	If Exhausting Temp. > **Th09**	→ goes in **Normal**	**U01**	**ON**	**ON**

6.5 Fixed Phase

Timer	Controls		Combustion Fan	Auger	Igniter
T04	If Exhausting Temp. > **Th09**	→ goes in **Normal**	**U01**	**C01**	**ON**

6.6 Variable Phase

Timer	Controls		Combustion Fan	Auger	Igniter
T05	If Exhausting Temp. > **Th09**	→ goes in **Normal**	I Ignition: **U01** II Ignition: **U10**	I Ignition: **C01** II Ignition: **C10**	**ON** If Exhaust Temp.<**Th02**
	If Exhausting Temp. >**Th06**	→ goes in **Stabilization**			
Control after**T05**	If Exhausting Temp. <**Th06**	→ tries again Ignition from **5.6 Variable phase**			
		→ goes in **Extinguishing** with error **Er12** in case of finished number of attempts			

6.7 Stabilization

Timer	Controls		Combustion Fan	Auger	Igniter
T06	If Exhausting Temp. > **Th09**	→ goes in **Normal**	**U02**	**C02**	**ON** If Exhaust Temp.<**Th02**
	If Exhausting Temp. <**Th06**	→ tries again Ignition da **5.6 Fase Variabile**			
		→ goes in **Extinguishing** phase with error **Er12** in case of finished number of attempts			
Control after **T06**	If Exhausting Temp. > **Th06+d01**	→ goes in **Normal**			

6.8 Recover Ignition

The system goes in **Recover Ignition**:

- After a lack Voltage Supply when the stove were in **ON,** when the voltage return if the Exhausting Temperature > **Th06+D01**
- Pushing the button ON/OFF when the system is in **Extinguishing**

Timer	Controls		Combustion Fan	Auger	Igniter
T16	If Exhausting Temp.>**Th01** Thermostat	→ waits and continues extinguishing	**U09**	**OFF**	**OFF**
	If Exhausting Temp.<**Th01** Thermostat	→ starts Timer **T16** of final cleaning	**Max Speed**		
Control after **T16**	If Exhausting Temp.<**Th01** Thermostat	→ goes in **Check Up**			

6.9 Normal

Parameters	Controls		Combustion Fan	Auger	Igniter
T14	If Exhausting Temp. < **Th03** Thermostat or If Exhausting Temp. < **Extinguishing Thermostat** for the used power	→ starts Timer **T14** of pre-extinguishing waiting	**User's Power**	**User's Power**	**OFF**
Control after **T14**	→ Goes in **Extinguishing** with error **Er03**				
	If Exhausting Temp. > **Th07** Thermostat If Water Temp.> **Boiler Thermostat**	→ goes in **Modulation**			
A01=1	If Room Temperature > **Room Thermostat**				
A07=1	If Input **AUX** open				
A01=2	If Room Temperature > **Room Thermostat**	→ goes in **Standby** → goes in **Standby**			
A07=2	If Input **AUX** open				
	Buffer Temperature > **Buffer Thermostat** and **P26**= 1				
T15	If Exhausting Temp. > **Th08** Thermostat If Water Temp.> **Th25** Thermostat	→ starts Timer **T15**			
Control after **T15**	→ Goes in **Extinguishing** phase for **Security**				

6.10 Modulation

Parameters	Controls		Combustion Fan		Auger		Igniter
T14	If Exhausting Temp. < **Th03** Thermostat or If Exhausting Temp. < **Extinguishing Thermostat** for the used power	→ starts Timer **T14** of pre-extinguishing waiting	**A06=1**	**A06=0**	**A06=1**	**A06=0**	
Control after **T14**	→ Goes in **Extinguishing** with error **Er03**						
T15	If Exhausting Temp. > **Th08** Thermostat If Water Temp.> **Th25** Thermostat	→ starts Timer **T15**	**U11**	**U03**	**C11**	**C03**	**OFF**
Control after **T15**	→ Goes in **Extinguishing** with error **Er05**						
A13=1	If for time **T43** Water Temp.> **Boiler Thermostat+d23**	→ goes in **Standby**					

6.11 Standby

Parameters	Controls		Combustion Fan	Auger	Igniter
T13 **Extinguishing**	If Exhausting Temp. > **Th28** Thermostat	→ starts Timer **T13**	**U09**	**OFF**	**OFF**
Control after **T13**	If Exhausting Temp. > **Th28** Thermostat	→ wait			
T16 **Final Cleaning**	If Exhausting Temp. < **Th28** Thermostat	→ starts **T16**	**Max Speed**		
Control after **T16**	→ Goes in **Standby OFF**		**OFF**		

6.12 Extinguishing

Parameters	Controls		Combustion Fan	Auger	Igniter
T13 **Extinguishing**	If Exhausting Temp. > **Th01** Thermostat	→ starts Timer **T13**	**U09**	**OFF**	**OFF**
Control after **T13**	If Exhausting Temp. > **Th01** Thermostat	→ wait			
T16 **Final Cleaning**	If Exhausting Temp. < **Th01** Thermostat	→ starts Timer **T16**	**Max Speed**		
Control after **T16**	→ Goes in **OFF** without errors		**OFF**		
	→ Goes in **Block** with possible errors				

6.13 Block

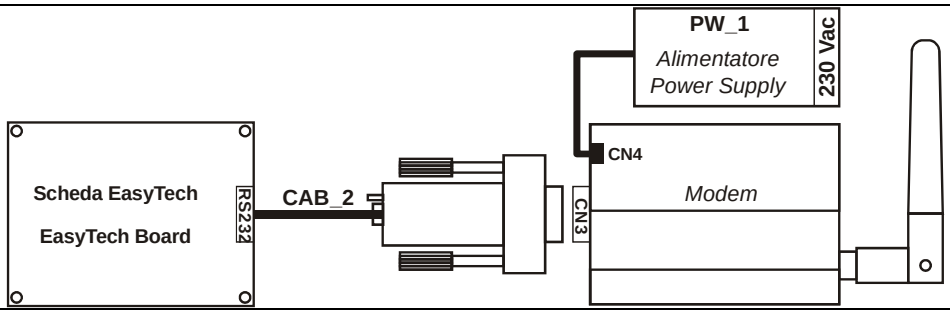
Controls	Combustion Fan	Auger	Igniter
To exit: Push for 3 seconds button **P1** With no more block conditions → Goes in **OFF**	**OFF**	**OFF**	**OFF**

7 Functions

7.1 Modem management

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

- Use a SIM card in the Modem enabled to the traffic GSM data
- Desable the PIN request from the SIM
- The Modem management is activated with the parameter **A50** =1
- The insertion and removal of the SIM card MUST be done with the Modem NOT supplied



The user can send an SMS to the Modem's SIM with a command word written both capital and small	
Start	To start **Ignition** from stove OFF. The Modem sends back a message to the number from which it received the command with a status and a possible alarm error code.
Stop	To start **Extinguishing** from stove ON. The Modem sends back a message to the number from which it received the command with a status and a possible alarm error code.
Status	To ask the stove's **State**. The Modem sends back a message to the number from which it received the command with a status and a possible alarm error code.
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 stove's state and the alarm error code.

7.2 Supply Voltage Lack Management

In case of Supply Voltage lack, the system saves the most important functioning data.
With the return of the Supply Voltage, the system evaluates the saved data and:

- If the stove were ON and the Exhausting Temperature more than **Th06**+**d01** the system goes in **Recover Ignition**. Pushing the button P1 it is possible the sudden new system's Ignition.
- If the stove were ON but the Exhausting Temperature is less than **Th06**+**d01** the system goes in **Extinguishing** with error **Er15**.
- If the stove were OFF, or in Extinguishing or Block, the system returns in the previous state.
- In case of prolonged absence of Supply Voltage (about one week) the systems goes in **BLOCK** ALt with error message **Er11** to indicate not correct DAY and TIME value.
  After the reset by the button P1, the **Time** value blinks signalling the need to set the right Time

7.3 Combustion power change delay Management

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

7.4 Brazier's periodic cleaning

When the stove is activated, the system automatically starts the brazier's periodic clearing.
With intervals as Timer **T07** (minutes) the Combustion is taken to Periodic Cleaning Power according to parameters **C08** and **U08** for the Timer **T08** (seconds).

7.5 Automatic combustion power management

In the Combustion Power setting, the user can set the Automatic modality **[A]**
The work power is automatically selected according to the Water Temperature and the value of the selected Boiler Thermostat:

- Water Temperature ≤ **Boiler Thermostat–d08**
  → The system goes to the maximum available Combustion Power
- **Boiler Thermostat–d08**< Water Temperature < **Boiler Thermostat**
  → The Combustion Power decreases reaching the Boiler Thermostat
- Water Temperature ≥ **Boiler Thermostat**
  → The system goes to Combustion Power 1 if **A06=0** or to Modulation Power if **A06=1**

Example:	**A06 = 1**	**Modality = [A]**	**Boiler Thermostat =75 °C**	**d08 = 5 °C**	**P03 = 5**

Water Temperature °C	**≤ 70**	**71**	**72**	**73**	**74**	**≥ 75**
Work Combustion Power	Power **5**	Power **4**	Power **3**	Power **2**	Power **1**	Power **1**

7.6 Pellet Load Correction Management

The user could correct the Auger's times ON of Pellet Loading in Step **– 7 ÷ 7**
P15 is the percentage value of the single correction Step and is applied on the Work default values.

C03=2,0	**C03=2,0**	**C03=2,0**	**C03=2,0**	**C03=2,0**	**C03=2,0**	**C03=2,0**	**C03=2,0**
C03=1,8	**C03=1,8**	**C03=1,8**	**C03=1,8**	**C03=1,8**	**C03=1,8**	**C03=1,8**	**C03=1,8**

The defined values are within the defined range P27 ÷ P05

7.7 Combustion fan correction management

The user could correct the Combustion Fan Speed in Step **– 7 ÷ 7**
P16 is the percentage value of the single changing Step and is applied on the Work default values.

U03=1000	**U03=1000**	**U03=1000**	**U04=1200**	**U05=1400**	**U06=1600**	**U07=1800**	**U11=900**
U03=1150	**U03=1150**	**U03=1150**	**U04=1380**	**U05=1610**	**U06=1840**	**U07=2070**	**U11=1035**

The defined values are within the defined range P14 ÷ P30

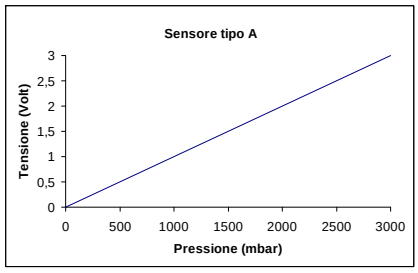
7.8 Speed combustion fan management

The parameter **P25** sets the regulation modality of the Exhausting Fan Speed

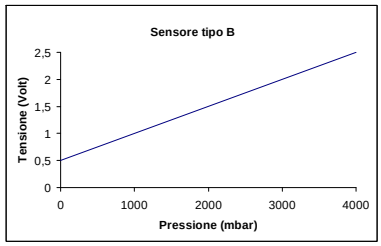
P25=0	Exhausting Fan without Encoder: the speed is defined by the set voltage value [Volt]. The Regulation Step is of 5 Volt.
P25=1	Exhausting Fan with Encoder: the speed is defined by the set number of turns [RPM] In case of signal presence but regulation failed, the system goes in BLOCK with **Er08** alarm In case of sensor break with absence of the signal, the system goes in BLOCK with **Er07** alarm
P25=2	Exhausting Fan with Encoder: the speed is defined by the set number of turns [RPM] In case of signal presence but regulation failed, the system goes in BLOCK with **Er08** alarm In case of sensor break with absence of the signal, the system goes in BLOCK with **Er07** alarm. After the reset of the **BLOCK** done by the button **P1**, the system goes **Automatically** to **P25=0**

7.9 Pressure Sensor Configuration

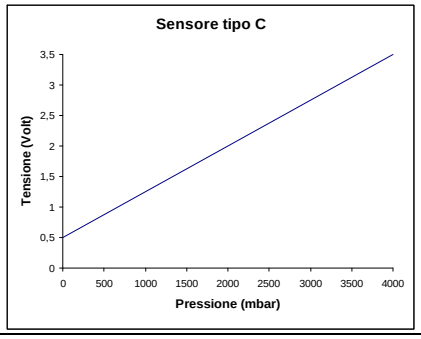
P20=0



P20=1



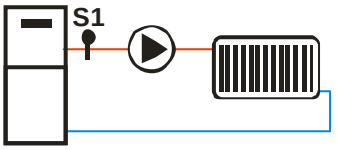
P20=2



7.10 Plumbing System Management

P26=0

Ex. Th18= 5 °C
Th19= 50°C
Th21= 80°C



P26=1

Ex. Th18= 5 °C
Th19= 40 °C
Th21= 80 °C
Th47= 8 °C