



# NEOTEK

Pellet fireplace insert for local heating



Wikey



2Ways2+

**INSTRUCTION AND  
ACTIVATION MANUAL**

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# 1. GENERAL CONSIDERATIONS

TEK Biomasse<sup>®</sup> is a registered trademark, whose heating equipment is manufactured by Vitor Monteiro Lda., and tested in accordance with European reference safety standards.

## 1.1. Symbolology

The following graphic symbols are used in this manual:

 - Tips and useful information,

 - Danger, important information to avoid accidents.

Attention: the symbols indicate important information in order to make the manual more lucid. However, this does not relieve the user of the obligation to comply with requirements that are not marked with a graphic symbol.

This manual is divided into two parts: one for the user and one for the installer. Both parts contain important and significant information for safety issues, therefore, the user should read both parts of the manual. We are not responsible for any damage caused by failure to follow these instructions.

## 1.2. Use

This equipment is a stove intended for domestic heating and is reserved for indoor installation. It must not be operated by anyone unfamiliar with this manual as well as by children, the elderly and others whose physical, mental and intellectual capacities are impaired.

Failure to observe these rules can cause property damage, threat to human life and health and domestic animals.

## 1.3. Packaging of documentation

This manual, as well as any other applicable documentation, must be stored diligently so that it is always available. In case of moving or selling the equipment, the documentation must be attached and forwarded to the new user/owner.

# 2. SECURITY WARNINGS

The instructions contained in this manual must be followed, both by the Technician (Installer, Maintenance) and by the User. Some of the warnings, if not followed, void the warranty contract.

## 2.1. Installer Technician and Maintenance Manager

**Installation of the stove is exclusively reserved for specialized technicians.**

The responsibility for installing the equipment cannot be considered the responsibility of Vitor Monteiro, Lda.

In case of necessity of works in the place of installation of the stove, these will be the responsibility of the user and whose expense falls on the same. Before being carried out, they always must be approved by the user.

The technical responsibility for the installation rests with the installer, who is asked to carry out the chimney checks, air intake and the correct implementation of the proposed installation solutions.

Installation of the equipment must comply with all national and European regulations, standards and laws.

The equipment must be installed on a surface capable of supporting its weight.

Confirm that the chimney design and air intake are in accordance with the installed equipment.



Do not make electrical connections with temporary and/or non-insulated cables.

Check that the equipment ground connection is effective.

Before starting the unpacking and assembling or disassembling of the stove, the Technician must take the safety measures prescribed by law, with special attention to those mentioned below:

- Ensure that the equipment installation site complies with all national and European regulations/laws;
- Ensure the use of all personal protective equipment;
- Make sure that the workplace is in a safe condition to perform the installation;
- To perform the installation, the installer must be in full psychophysical conditions;
- No work should be carried out under conditions



During maintenance operations, the technician must carefully observe the following instructions:

- Maintenance should only be carried out by qualified personnel, at least once a year;
- Check that the stove is cold before carrying out any type of work;
- Disconnect the equipment from the electrical current before starting maintenance work;
- Use personal protective equipment and/or other means of protection;
- All electrical and mechanical components guarantee the correct functioning of the stove, so they can only be replaced by original components purchased at the brand's technical assistance;

- The equipment must be taken out of service if any safety component is defective or out of calibration.



On water models, the installer must inform the user of the following:

- In case of water leaks, it is necessary to turn off the water supply and immediately notify technical support.
- System pressure operation must be checked periodically.

## 2.2. User

**Before using for the first time, the user must read this manual in its entirety** and bear in mind the following:

- Immediately disconnect the equipment from the power supply in the event of a breakdown or malfunction;
- The power plug must be easily accessible;
- When in normal operation, never disconnect the stove from the electrical supply;
- If you are not going to use the stove for a long period of time, disconnect the power and remove the pellets from the hopper;
- After a more or less prolonged downtime, must be done a regular maintenance on the equipment;
- The stove must not be switched on without having carried out the daily maintenance and/or inspection as mentioned in point 11.2.1- Daily cleaning

This stove does not work with wood, use only 100% wood pellets as fuel according to the manufacturer's recommendations. See point 5.1- Fuel characteristics



- This equipment is not an incinerator do not use foreign substances as fuel;

- It is forbidden to operate the equipment with the door open or with broken glass, or even to open the door with the equipment in operation;
- The equipment lights up automatically, so you should not use any product to light the stove, especially flammable liquids;

During the first lighting of your equipment, it is possible that some odors may be released resulting from the natural drying of paints and putties. Avoid prolonged exposure to these odors. It is advised:

- Air the space;
- Do not touch surfaces when they are hot to avoid damaging the coating.

- When in operation, the fireplace has very hot surfaces, so you should not approach or touch them, with special emphasis on the glass and door, chimney, among other elements;
- It is forbidden to place clothes to dry or other objects on the equipment or in its proximity that impede the free circulation of air;
- Clean the equipment only when it is completely cold and turned off;
- The ash compartment must not be opened while the stove is in operation. Wait for it to stop and cool down completely to clean the ash.



**Children:** - Do not let children play near the stove or touch it.

- The equipment extinguishes by itself, so do not use water or to put out the fire in the brazier;
- Periodically clean the chimney in accordance with the instructions in point 11.3.1- Chimney cleaning.

### 3. LEGAL GUARANTEE

The manufacturer guarantees the product, with the exception of elements subject to normal use, listed below, in compliance with Directive CEE199/44/EC from the date of purchase attested by:

- Invoice with date of purchase;
- Installation compliance certificate issued by the installer.

Exclusions:

The warranty does not cover damage or malfunctions arising from the following causes:

- Damage caused during transport or handling;
- Failure of components resulting from improper use or negligence, lack of maintenance, installation in violation of current regulations and laws.
- Use of poor quality pellets or any other similar product in disregard of the provisions of Point 5;
- Malfunctions resulting from poorly executed repair attempts;
- Forced use of equipment after failure alarm;
- Chimney malfunction;
- Damage caused by tampering with the equipment, atmospheric agents, natural disasters, vandalism, electric shocks, fires, failures resulting from the electrical or hydraulic network.

The following items subject to normal use are not covered by the warranty:

- Vermiculite;
- Door glass;
- Fiber sealing cord;
- Painting;
- The brazier (burner) in cast iron;
- The ignition resistance.

## 4. REPLACEMENT PARTS


In maintenance operations, only **original parts may be used**. For this purpose, consult the technical assistance service.

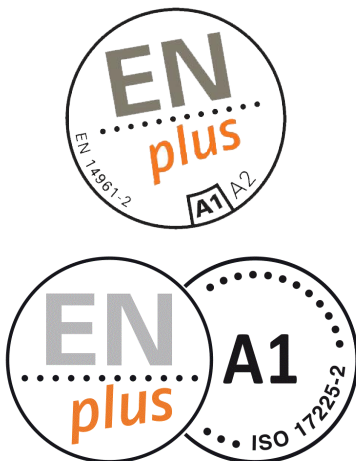
Do not wait until the complete failure of the components, therefore, it is recommended that they be replaced when necessary in the periodic maintenance actions.

The manufacturer will guarantee replacement parts for the legally prescribed period.

## 5. FUEL

100% pressed pine wood pellets certified according to the EN PLUS A1 standard are the only fuel allowed for use in this boiler.

 The pellets used must be certified and in accordance with EN Plus 14961 or ISO 17225-2.



### 5.1. Fuel characteristics


Pellets are produced by pressing wood chips and sawdust. They are obtained without the addition of any foreign substance, such as adhesives, lacquers or synthetic substances.

Pressing through a matrix of holes and the heat produced by friction and pressure, activates natural wood binders that in this way ensure the shape of the pellets even without the addition of binders.

The production and consumption of pellets is based on the rational use of renewable energy with zero impact on the CO<sub>2</sub> cycle, which respects environmental protection standards.

This is the only fuel indicated for this equipment.

Yield and power vary depending on the quality of pellets used.

 For correct operation you must use pellets according to the characteristics below.

Technical Fuel Information (Pellets)	
Diameter	6mm
Length	10 to 30 mm
Density in the bag	min. 650 kg/m <sup>3</sup>
Humidity	Max. 10%
Max. from the ashes	Max. 1.5%
Max. from the dust	Max. 2.3%

Calorific value of various fuels:

Wood Pellets	4.9 kWh /kg
wood chip	± 850 kW.h /m <sup>3</sup>
soft woods	±1500 kW.h /m <sup>3</sup>
hard woods	±2000 kW.h /m <sup>3</sup>
Coal	7 kW.h /kg
Naphtha	7.5 - 8 kW.h /kg
Natural gas	9.5 - 10.2 kW.h /m <sup>3</sup>
liquid gas	12.8 kWh /kg

The stove is equipped with a hopper (deposit) for pellets with a capacity for 1 bag of 15 kg.

The pellet supply must only be carried out through the drawer that gives access to the loading compartment located at the top. This must only be opened to load the pellets. It is not recommended to supply pellets with the stove in operation.

Place the pellets in the drawer and push back with a small squeegee.

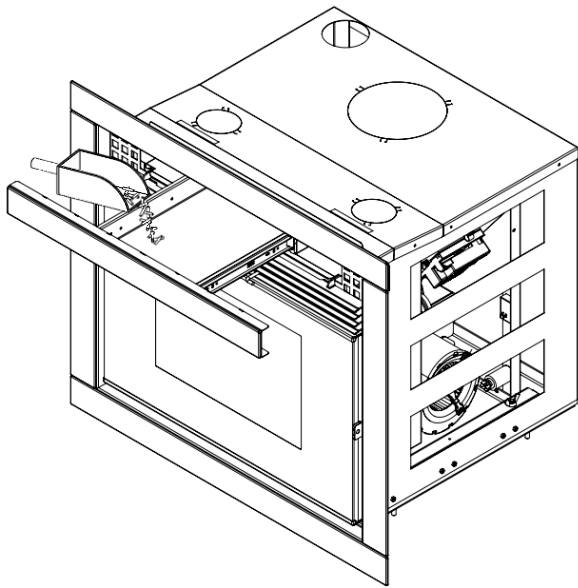



Figure 1- Pellet loading drawer

## 5.2. Pellet storage

The operation of the stove largely depends on the quality and conservation conditions of the pellets, for this reason they must be stored in a dry place where temperatures are not too low.

Poor packaging of the pellets can lead to the breakdown of particles and create sawdust. Sawdust is responsible for the malfunction of the power system and can block it.

 We recommend storing a few bags of pellets in a warm and dry place, because cold pellets (5°C) and/or damp reduce the calorific value of the fuel and cause more dirt, requiring more rigorous maintenance and cleaning.

## 6. UNLOADING AND TRANSPORT

The stove must be transported vertically without rocking during the entire transport process.

The stove's brazier as well as other components can come loose causing damage to the product.

The stove's packaging must not be impacted or hit by other objects or equipment, under penalty of causing damage that will compromise the stove's future operation.

Make sure that the means of transport used has a capacity greater than the weight of the stove.

## 7. INSTALLATION MANUAL

The Installation Manual is provided with this user manual.

To obtain the best performance from the stove and uniform heating of the room, you must comply with the essential rules indicated in the Installation Manual.

Improper installation will compromise the safety and proper functioning of the stove.

When installing the equipment, all national and local regulations, as well as European standards, must be observed.

### 7.1. Installation constraints

Consult the installation manual to ensure correct procedures for:

- Safeguarding the safety distance from combustible materials
- Air supply and smoke evacuation.

Smoke exhaust duct: see point 7.2- Smoke evacuation duct.

If a fire occurs in the equipment or chimney, you must:

- Immediately turn off the equipment;
- Do not open any equipment door;
- Do not use water to put out the fire;
- Putting out the fire using a CO<sub>2</sub> extinguisher
- Request the intervention of the fire department.

See the terms of legal warranty and replacement parts in the points: 3- Legal guarantee and 4 - Replacement parts.

## 7.2. Smoke evacuation duct

The smoke discharge from the stove is with positive pressure in relation to the surrounding environment, so it is essential to guarantee the tightness of the various chimney joints. The smoke evacuation duct must be independent from other equipment.

To guarantee the correct extraction of the smoke, it is mandatory that the first section of the chimney be vertical with a height of not less than 1.5 meters.

The horizontal sections must not exceed 1.5 meters in length, with a slope of at least 5%.

The chimney outlet must comply with EN 1856-2 for built-in masonry chimneys and EN 1856-1 for insulated outdoor chimneys. It must be in 0.5mm thick 316 stainless steel, with dimensions respecting what is indicated in the characteristics of the equipment, regarding the smoke outlet.

The smoke duct must have a diameter of 80 mm, with male/female joints fitted with a high-temperature silicone gasket (>200°C) with inverted installation (male downwards) to prevent condensation from flowing out of the chimney.

For chimneys over 5 meters high, their section must change to a diameter of 100 mm after 5 meters. The dimensioning of the smoke duct must be done considering 0 Pa.

The piping used outdoors must be in double-walled stainless steel, in order to avoid condensation and corrosion of the same, resulting from the thermal shock.

**It is forbidden to install dampers, butterflies or valves that strangle the chimney's draft capacity.**

The fume exhaust capacity depends on several factors, including the height of the chimney. Depending on these factors, it may be necessary to make adjustments to the stove's operating parameters. Excess draft when it is not possible to correct it by changing parameters such as air intake and pellet loading, it will imply the installation of an air intake valve to the chimney.

If necessary, contact the technical assistance service.

### 7.2.1. Basic requirements

The chimney must be made of stainless steel duct and must rise 50 cm above the highest point of the building's roof.

### 7.2.2. Installation

Ensure that your smoke duct reaches the top of the masonry chimney so that there is no return of smoke by the action of the ambient fan inside the fireplace.

Above the level of the fireplace, place a fireproof plasterboard to prevent smoke from returning through the chimney.

Whenever the smoke duct exceeds 5m in height, its section must be increased to  $\varnothing$  100.

It is recommended to use a double-walled smoke duct in the outdoor area.

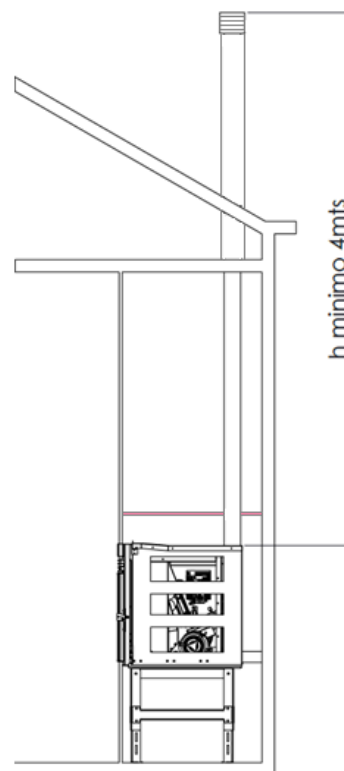
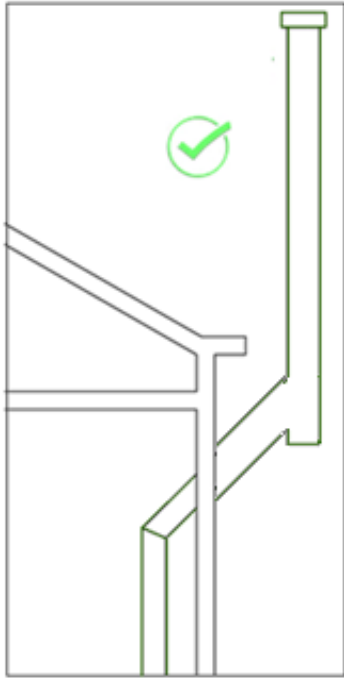

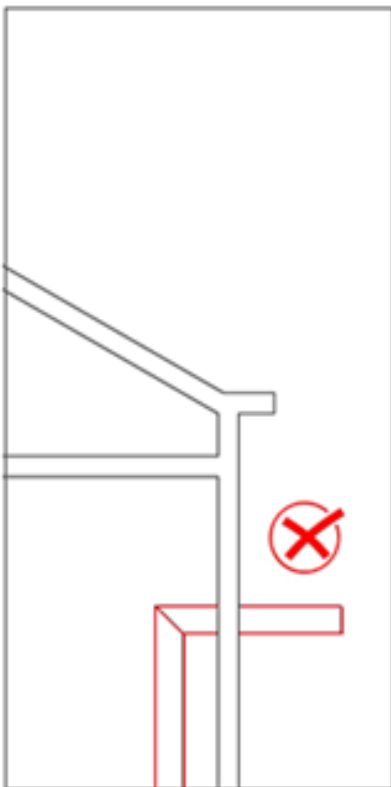


Figure 2- Smoke exhaust duct requirements



**Figure 3- Standard for vertical installation**


 Horizontal smoke outlets ending on the wall are NOT allowed.

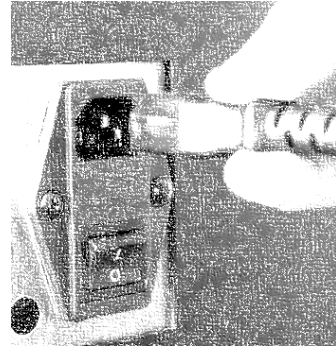


**Figure 4- Incorrect installation**

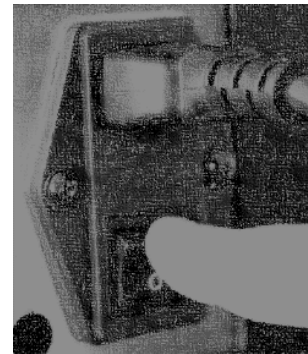
### 7.3. Electrical installation

Installation must be carried out by qualified personnel according to EN 10683. Ensure that the electrical installation has ground connection.

 With the switch off, connect the cable to the wall socket and plug.



Turn on the switch to electrically supply the stove.



For more information, see point 13- [Electric scheme](#) of this manual.

### 7.4. Installation test

For installation tests must be taken into account chapters 8.2 - [Lighting](#) and 8.3- [Stop](#) as the Installation manual.

### 7.5. Maintenance

When installing the equipment, the space required for the maintenance and cleaning of the equipment and respective connection and smoke evacuation ducts must be taken into account.

For more detailed information, see point 11- [Maintenance](#).

## 7.6. Other information

### 7.6.1. Calculation of thermal power and average hourly consumption

The calculation of the thermal power required for heating a given space can be performed using a very simple method, since, on average, the heating power required for a properly insulated room is approximately 40 W/m<sup>3</sup>.

If we want to heat a space with 100m<sup>3</sup> then we have:

$$100\text{m}^3 \times 40\text{W/m}^3 = 4000\text{W}, \text{ that is, } 4 \text{ kW}.$$

For this requirement of main heating a 6.5 kW appliance will ensure that necessity.

## 8. USE OF THE STOVE

Watch videos on using and maintaining your equipment at [www.tekbiomasse.com](http://www.tekbiomasse.com)

### 8.1. Useful information

Fuel used: see point 5- [Fuel](#).

In order to avoid the risk of fire, you must comply with the instructions contained in point 2.2 [User-Security warnings](#), with **special emphasis** on the following aspects:

- **It is forbidden to place clothes to dry** or other objects on the equipment or in its proximity that block the free circulation of air;
- **Clean the equipment** only when it is completely **cold and turned off**;
- The ash compartment **must not be opened** while the stove is in operation. Wait for it to stop and cool down completely to clean the ash.

## 8.2. Lighting



Ignition can only be carried out with the brazier **EMPTY** of pellets and/or ash.

The stove is switched on by pressing the ON/OFF key for 3s.

The word "Activation" will appear on the display until ignition is complete. This process will take an average of 5 to 12 min. Once completed, the ignition will move to a flame stabilization phase and, finally, it will enter the previously selected power level or that which was in use when the stove was last turned off.

The user can select between 5 power levels or "AUTO".

## 8.3. Stop

Stopping is carried out by pressing the ON/OFF key for 3s. The word "Deactivation" will appear on the display. Pellet feeding will be stopped, and the room and smoke extraction fans will be activated to guarantee the complete burning of all the material until the stove temperature is reduced to 40°C.

## 8.4. Unplug the device from the mains

**Caution!** Ensure that the device is not disconnected from the power supply when it is in operation.


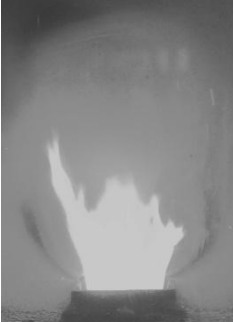
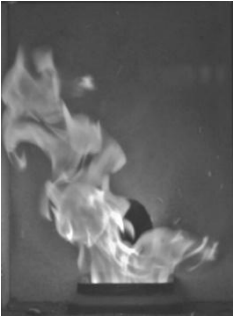
Disconnecting the appliance from the power supply requires that the appliance is not performing any operations and that the display reads "OFF".

## 8.5. Technical Board

For information on the efficiency values of the device and the value of the CO emission, see point 14- [Models and technical characteristics](#).

## 8.6. Flame correction

In the following figure you will find several examples that will help you to check the stability and correctness of the flame.

	<p><b>Correct combustion</b></p> <p>Bright flame with light yellow color and minimum amount of pellets in the brazier</p>
	<p><b>Incorrect combustion</b></p> <p>Flame too bright Too much oxidizer.</p> <p>Too many glowing pellets come out of the brazier.</p> <p>Correct the amount of air (from 0 to +5). Correct the auger if necessary (from 0 to -5).</p> <p>If not, contact technical support.</p>
	<p><b>Incorrect combustion</b></p> <p>Flame too dark yellow, wobbling, with too many unburned pellets in the brazier.</p> <p>Check that the door or ash bin is closed.</p> <p>Otherwise, correct the amount of air (from 0 to +5). Correct the auger if necessary (from 0 to -5).</p> <p>If not, contact technical support.</p>

## 8.7. WIKEY control panel functions



### L1 multicolor led:

- BLUE: System Off
- GREEN: System On
- Flashing GREEN: System Ignition or Extinguishing
- RED alternating with two other colors: System in Error

### L2: Maintenance

### L3: WiFi connection

- Fixed: Connected to the local WIFI network
- Blink: WiFi Setup

### L4: Displays the Heating Power in the values of Leds L7, L8, L9.

### L5: Displays the local room thermostat in the values of Leds L7, L8, L9.

### L6: Displays the Combustion Power in the values of Leds L7, L8, L9.

### L7 - L8 - L9: Display the value of the selected parameter (Minimum, Medium, Maximum).

**K1 key:** switch on/unlock/off the heating system for 3 seconds.

**K2 key:** select the parameter you want to display (Combustion Power, Room Thermostat, Heating Power).

If pressed for three seconds and key K2 enters the local mode of WIFI network configuration (Led L7, L8, L9 flashes).

**K3 key:** The single click allows you to enter the modification of the selected parameter ( the LED corresponding to the parameter flashes while the LEDs L7, L8, L9 show its value). If you continue to press the key, the parameter value will be modified. If you press it during the local WIFI network setup mode, it allows you to start the setup process and if you press it for a few seconds, it allows you to reset the settings instead.

## CHANGING THE VALUE OF A PARAMETER

Select the parameter to be modified with the K2 key.

Press K3 key to enter to modify the value, the LED corresponding to the parameter flashes while LEDs L7, L8, L9 show its value.

Press K3 key again to modify the value.

Data is saved after 5 seconds if no key is pressed or if you move to the next parameter by pressing K2.

### Value of LEDS L7,L8,L9

NOTE: User can set average and maximum value of Local Room Thermostat through 2WAYS2+ device.

VALOR LED	0	Mínimo	Medio	Máximo	Auto (sólo para potencias)
L7	○	○	○	●	●
L8	○	○	●	●	●
L9	○	●	●	●	●

## 9. 2WAYS2+ REMOTE COMMAND



The radio remote control thermostat manages the operation of the equipment and monitors the operating status in real time.

The main features are:


- System remote control
- Room thermostat
- Management of operating and control parameters

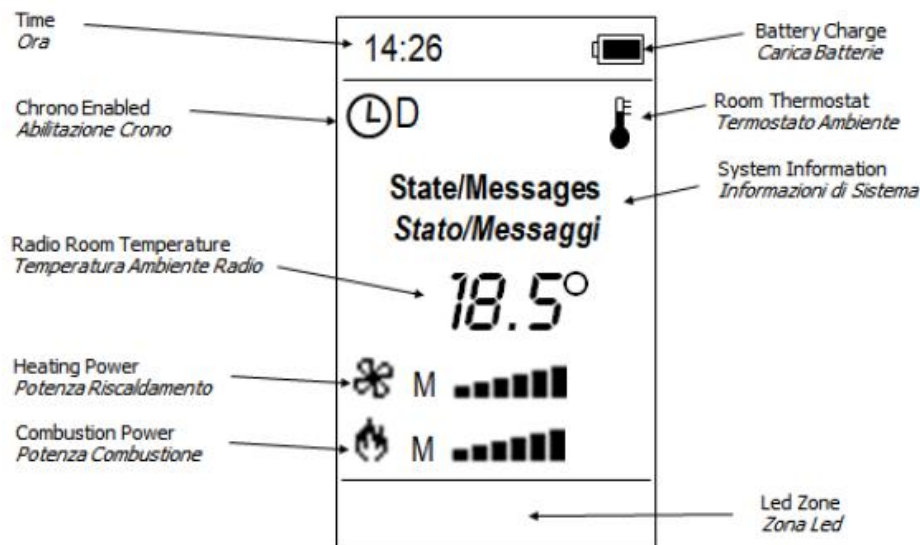
### Attention:

The system operates on the 868.3MHz ISM radio band.

The transmission and reception distance may be reduced in the case of electromagnetic noise environments: other devices such as wireless headphones, remote control toys or other devices may influence the system's performance. Check for the presence of such instruments and be sure to turn them off in order to avoid electromagnetic wave pollution. If more 2Ways2+ remote thermostats are nearby, it is necessary to associate the remote control with each specific boiler (see settings menu).






### 9.1. Screen

Pressing the button  turns on the screen and displays the main window.



## 9.2. Control panel

### 9.2.1. The keys

KEY	OCCUPATION	DESCRIPTIVE
	<b>On / Off</b>	Press button On/Off for 3 seconds for Ignition or Extinguishing
	<b>Unlock</b>	Unlock the system pushing the button for 3 seconds
<b>ESC</b>	<b>Esc</b>	Exit from the menus
<b>SET</b>	<b>Set</b>	Enter Submenus, edit and save data
	<b>Power</b>	Entry in Menu Combustion Power
	<b>Increase</b>	Parameter Increasing
	<b>Switch between menus</b>	Switch between Submenu and Menu
	<b>Temperature</b>	Entry to Menu Thermostat Room
	<b>Decrease</b>	Parameters Decreasing
	<b>Switch between menus</b>	Scroll Menu and Submenu
	<b>Sleeping mode</b>	Pushing the button when the remote control is in the main frame, the remote control continues to work but the display switches off, decreasing, the consumption of the batteries. To switch on the remote control again push the button again.
	<b>Standby mode</b>	Pushing the button for 3 seconds from the main board, it turns OFF completely the remote control decreasing in this way the consumption of the batteries. This feature is to be used in case of prolonged non-use of remote control. If the function is activated, the system uses the room probe connected to the board To switch on the radio control again push again the key and push twice the key  .

#### - Error codes:

Consult specific section: 12 - Error codes.

**Cleaning:** Periodic cleaning in progress.

#### - Battery charge level:



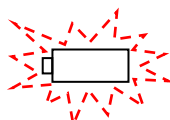
Full battery charge



Battery charge at 2/3



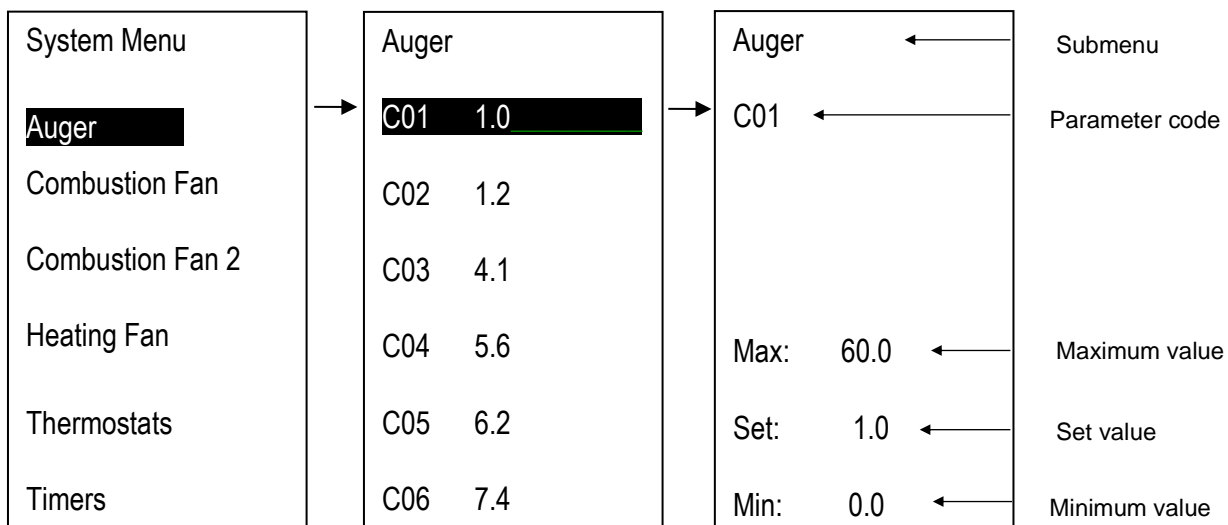
Battery charge at 1/3



Flat battery; replace batteries as soon as possible.  
The image blinks.

### 9.2.2. Menu

To enter the menu press the **SET key**. A list of available submenus appears by pressing, selecting the desired submenu and pressing **SET** again, the desired parameters will be displayed:



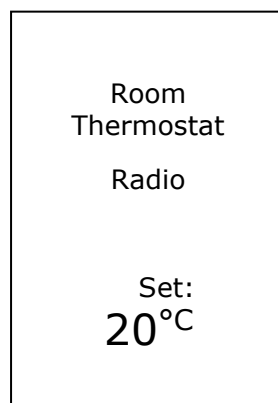
Pressing SET again will enter the editing mode of the desired parameter, with the keys  $\wedge$   $\vee$  you can change the value, at the end you must record by pressing SET again. To exit the submenu press ESC as many times as necessary until you reach the main menu if that is the intention.

If the thermostat cannot communicate with the boiler, the message "Transfer unsuccessful" will appear. *In this situation, approach the boiler and repeat the operation.*

### 9.2.3. Modify room temperature




Use the keys  $\wedge$   $\vee$  to change the desired ambient temperature value.

At the end press the **SET key**.



### 9.3. User menu

<i>MENU</i>	<i>DESCRIPTIVE</i>	
<b>Power</b>	<p><b>Combustion</b></p> <p>Allows you to modify the combustion power of the system in pellet mode. It can be set to automatic or manual mode. In the first case, the system chooses the combustion power. In the second case, the user selects the desired power. The combustion mode (A = automatic combustion, M = manual combustion) and the system's working power level are indicated on the left side of the display.</p>	
	<p><b>Heating</b></p> <p>Allows to modify the ambient fan speed default value. It can be set to automatic or manual mode. In the first case, the system alone chooses the fan speed as a function of temperature. In the second case, the user selects the desired speed. On the left side of the display, the combustion mode (A = automatic combustion, M = manual combustion) and the working speed level of the room fan are indicated.</p>	
<b>Thermostats</b>	<p><b>Room thermostat</b></p> <p>It allows to modify the value of the desired temperature for the environment. You can choose the value between the defined minimum and maximum values.</p>	
<b>Chrono</b>	<p>Menu to select the type of operating mode for the time schedule and the operating time intervals.</p> <p>You can find the detailed explanation in point 9.4- Chrono</p>	
<b>Monitor</b>	This Menu shows some important system data	
	<i>DISPLAY</i>	<i>DESCRIPTION</i>
	T. Smoke	Smoke Temperature[°C]
	Room T.	Ambient temperature detected by the <i>board</i> [°C] (only visible if there is a probe)
	Air Flow	Air Flow [cm/s]
	Fan	Combustion extractor speed [RPM]
	Revenue	Current combustion revenue [ nr ]
	Product code	Product Code: 537
	FSYSI01000060.0.0	Firmware code and version
	FSYSC02000032.0.0	Remote Control Firmware code and version
<b>Refill</b>	<p>Menu to start calculating the fuel used and showing the amount of pellets remaining in the deposit. You have 4 charge levels: 100% (deposit full), 75%, 50%, 25%, 0 (function off).</p>	
<b>Soft mode</b>	<p>Menu to turn the Soft Mode function on and off. In this mode, the equipment works in silent mode, cutting the total power to 50%</p>	

<b>Settings</b>	<b>Thermostat management</b>		
	Menu for setting the operation of the wireless radio thermostat		
	<i>STATUS THERMOSTAT</i>	<i>DESCRIPTIVE</i>	
	Activated	The radio thermostat is used by the equipment	
	Disabled	The system uses the equipment's control panel and on the main display panel the thermostat value and image will disappear.	
	<b>Radio Standby</b>		
	Menu to completely turn off the remote thermostat and decrease battery consumption		
	<i>DESCRIPTIVE</i>	<i>DISPLAY</i>	
	Press the SET key to activate Standby mode. To activate the radio again, first press the switch  and then the button twice  . If the function is activated, the boiler will ignore the ambient temperature and work only according to the values programmed in the boiler itself.	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Standby  Radio </div>	
	<b>Date and time</b>		
	Menu to set the date and time		
	<i>DESCRIPTIVE</i>	<i>KEYS</i>	<i>DISPLAY</i>
	Select hours, minutes, year, month and day	^ v	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Time and Date  16:45  Thursday </div>
	Enter edit	SET	
	Modify value	^ v	
Save value	SET		
Exit	ESC		
<b>Contrast</b>			
This Menu allows you to set the display contrast			
<i>DESCRIPTIVE</i>	<i>KEYS</i>	<i>DISPLAY</i>	
Modify value	^ v	<div style="border: 1px solid black; padding: 5px; text-align: center;"> Set Contrast  +   </div>	
Save	SET		
Exit	ESC		
<b>Key sound</b>			
Menu to enable or disable key sound.			
<b>Language selection</b>			
Menu to change language. The highlighted language is the one currently defined.			

<b>Service</b>	<b>Counters</b>	
	Ignitions	Number of ignition attempts
	Failed ignition	Number of failed ignitions
	Working hours	Operating hours in Work, Modulation and Safety mode
	<b>Errors List</b>	
	The menu shows the last 10 errors; on each line, the error code and the time/date of each error are shown. On the K100 display, to delete the list, enter the Counters menu Reset.	
	<b>WiKey thermostat</b>	
	This menu allows you to set the minimum, average and maximum value of the remote thermostat editable from the WiKey keyboard. It is only shown if a WiKey keyboard is included in the system.	
	<b>Radio Test</b>	
	This Menu is used to test the connection between the radio terminal and the boiler controller, thus checking the level of electromagnetic pollution. The Radio Terminal enters continuous transmission and counts correct and failed responses. The signal quality depends on the number of errors (misses).	
<b>Change code (only if it is necessary to pair different boilers with different thermostats in the same area)</b>		
Code change allows the remote control to be matched to the boiler, so that a remote control is only matched to a specific boiler allowing different boilers to coexist in the same area). To change the code: Section code		
<ul style="list-style-type: none"> <li>• Enter the Boiler Learning Menu and learn the board and press the <b>SET key</b></li> <li>• Press <b>SET</b> on the radio thermostat and check the action result</li> </ul>		
<b>Auger calibration</b>		
Allows to modify the default value of speed or work time of the auger, increasing or decreasing the quantity of pellets delivered. Values are in the range - 7 ÷ + 7. The default value is 0.		
<b>Calibration of the smoke extractor</b>		
Allows to modify the default value of combustion fan speed, increasing or decreasing the combustion air volume. Values are in the range - 7 ÷ + 7. The default value is 0.		
<b>Manual loading</b>		
Function for filling the auger on the first start-up, or after a start-up failure due to an empty hopper.		
The procedure activates the manual loading of pellets in continuous mode of the auger motor. Charging stops when user presses ESC key or automatically after 300 seconds.		
This function is only active if the equipment is in Off (stopped)		

<b>System menu</b>	Menu to enter the Technical Menu. It is password protected by installer. Press SET to enter edit mode and $\wedge$ to increase or $\vee$ decrease the selected digit. Press SET to save the digit and move to the other. Press ESC to cancel the digit or exit the Menu. If the password is correct, the first screen of the menu appears.	
	<i>Menu</i>	<i>Descriptive</i>
	<b>Auger</b>	Auger Menu
	<b>Fan combustion</b>	Combustion Fan Menu
	<b>Exhaust fan 2</b>	Exhaust Fan 2 Menu
	<b>Fan heating</b>	Fan Heating Menu
	<b>Thermostats</b>	Thermostats Menu
	<b>Th extinction</b>	Thermostats Menu Extinguish
	<b>Timers</b>	Timers menu
	<b>Activations</b>	Activations menu
	<b>Air mass sensor</b>	Primary Air Regulator Menu
	<b>Accountants</b>	Counters Menu
	<b>Test outputs</b>	Output Tests Menu
<b>Restore factory values</b>	Menu to restore values and parameters set by the manufacturer	

## 9.4. Chrono Menu

Menu to set the start and end time of work in local heating mode.

### 9.4.1. Modality

To turn the system on using the chrono, select the mode after programming the on and off times.

<i>DESCRIPTIVE</i>	<i>KEYS</i>	<i>DISPLAY</i>
The current mode is highlighted and flashes		Modality  Chrono Modality  Deactivate  Daily  Weekly
Select preferred mode	$\wedge$ $\vee$	
Cancel changes and restore the old mode	<b>ESC</b>	
Save the new configuration	<b>SET</b>	
Exit menu	<b>ESC</b>	

### 9.4.2. Time schedule

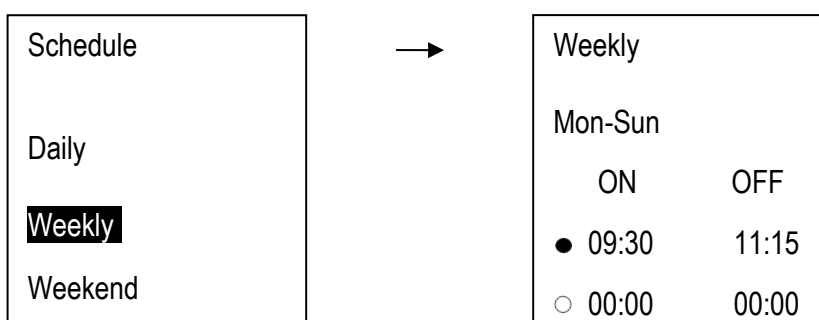
Choose the type of programming to set (after programming it is necessary to select the desired mode in the mode menu to turn the system on/off by Chrono):

- **Daily:** Select the day of the week and schedule the start and end times; for each day there are 3 time periods.  
This mode runs 3 different time intervals for each day of the week.

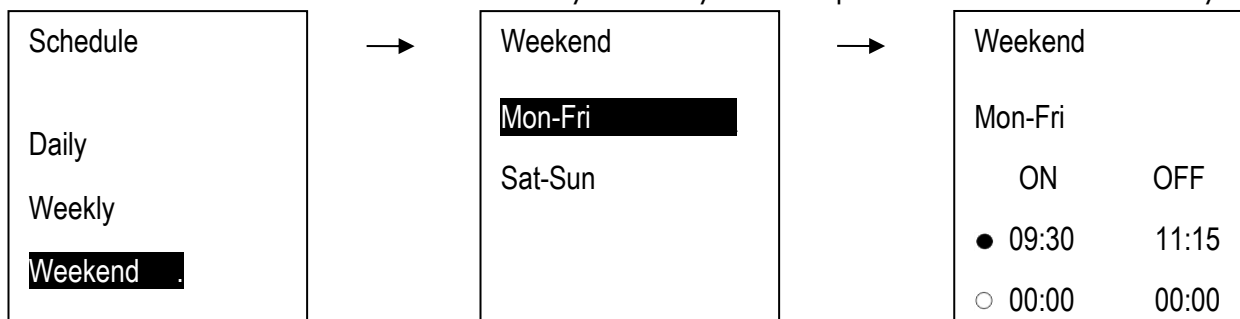


When you need a program to go past midnight. Set the extinguish time for one day at 23:59 and the ignition time for the next day at 00:00. In this way the boiler will not restart its operation at midnight.

- **Weekly:** Program the times to turn the system on and off (there are 3 time intervals).  
This mode runs 3 time intervals from Monday to Sunday



- **Weekend:** Choose between 'Monday-Friday' and 'Saturday and Sunday'. There are 3 time slots for each period.  
This mode runs 3 intervals from Monday to Friday and 3 separate intervals on Saturday and Sunday.



The three types of schedules are stored separately: if for example the daily mode is set, the other modes are not changed.

TIME SCHEDULE	KEYS
<b>After choosing your favorite program:</b>	
Select schedule time	^ v
Enter modify mode (selected time flashes)	SET
Modify timers	^ v
Save the program	SET
Enable/Activate the program ( ● appears) or disabled ( ○ appears)	
Exit	ESC

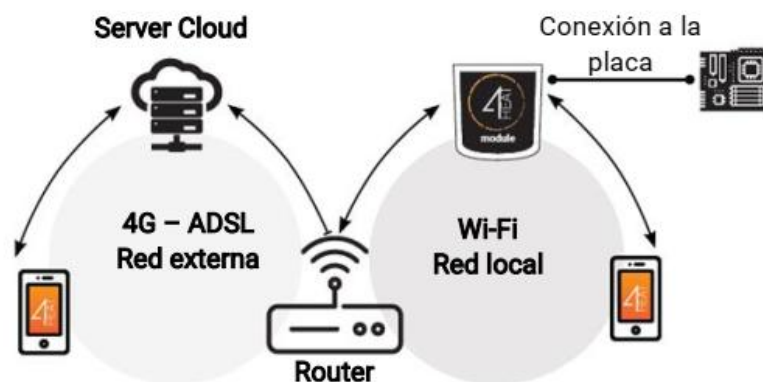
## 10. INSTALLING AND CONFIGURING THE 4HEAT APP



### 10.1. System architecture

The architecture includes three macrosystems:

1. 4HEATModule ( Wikey or Pinkey ): hardware device that interacts with the TiEmme electronic control board and the local Wi-Fi router;
2. SERVER CLOUD: web server infrastructure that allows data storage and works as a stellar hub for remote communication;
3. 4HEAT: smartphone application available on Google Play Store and App Store for free, which allows the user to interact with the heating system.



### 10.2. Local call and remote connection

#### Local connection

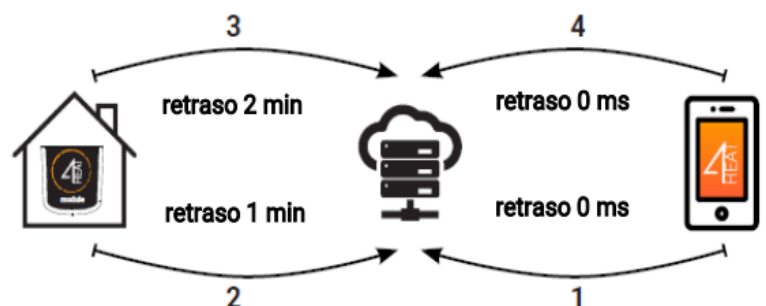
The connection between the 4HEATModule ( Wikey or Pinkey ) and the APP is made over the home Wi-Fi network, only if both are connected to the same Wi-Fi network.



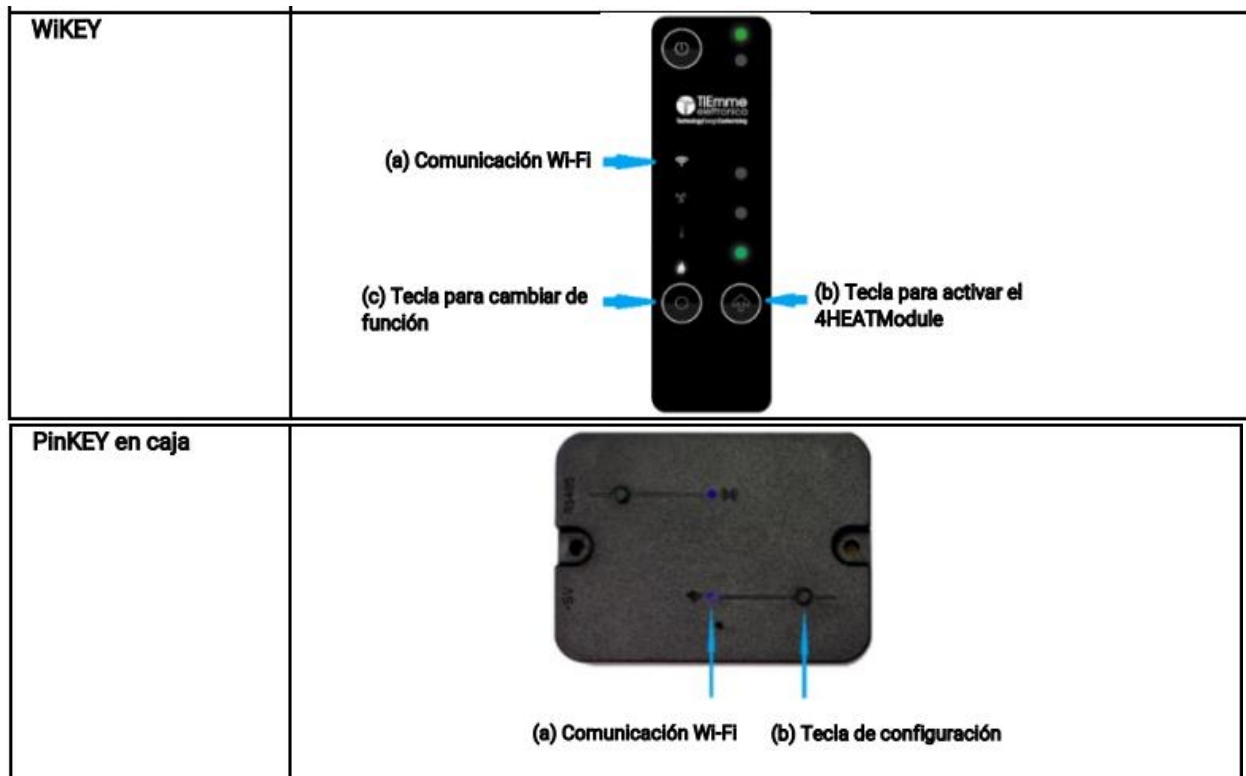
#### Remote connection

We speak of remote connection when, at the time of using the App, the user is away from home.

In this case, the App uses your Smartphone's data coverage and the Cloud Server allows signal triangulation to remotely manage the Module. Remote connection times may vary depending on network data traffic, network connection conditions and traffic to the server. In the worst case, connection can be up to 5 minutes late.



### 10.3. Keys and LEDs on 4Heat modules



### 10.4. Installation

To test the device, perform the following procedures:

- Connect the 4HEATModule to the power supply:**
  - WiKEY: make sure that the equipment (boiler, stove or stove) is connected to the network;
  - PinKEY: Wi-Fi led (a) fixed red;
- Connect the 4HEAT Module to the electronic board using the cable provided in the kit:**
  - WiKEY: already connected to the heating system (boiler, stove or stove);
  - PinKEY: the Wi-Fi Led Steady Red, if at the end of the configuration procedure the Wi-Fi Led (a) turns Steady Green the device does not communicate correctly with the board, make sure that the device is connected correctly and that the heating system (boiler, stove or stove) is connected to the electrical network;
- Wi-Fi communication:** if the Blue LED has a steady light, the communication with the application was successful and the device is communicating correctly, while in WiKEY we will have the fixed Wi-Fi led;
- Hardware reset key:** Press in case of persistent product malfunction. The WiKEY device does not have a reset key.

👉 If the appliance is off during normal operation, press button (b) for 4 seconds. During setup and operation, the LEDs may change from steady light to flashing.

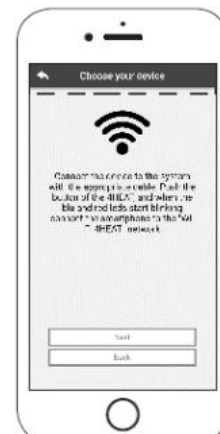
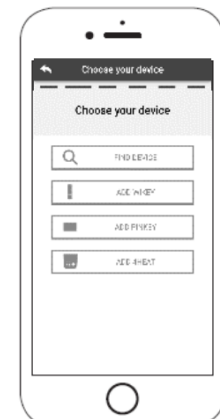
## 10.5. New 4HEAT module configuration

Install the 4HEAT app available on the Play Store and App Store for free, to interact with the heating system.

Connect your smartphone to your home Wi-Fi network and disconnect your mobile phone from the data connection. Also activate the GPS.

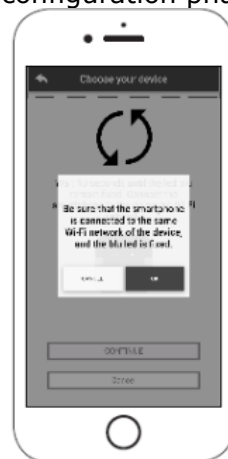
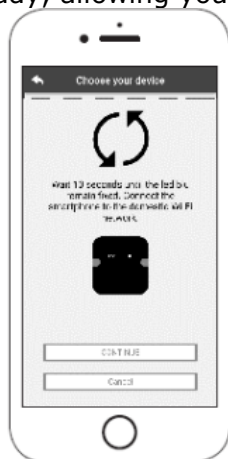
When you open the application you are asked to select the language. Explains the 4HEATModule device configuration procedure:

1. Create an account with a valid email address and password of your choice, filling in all fields;
2. Choose from "FIND DEVICE", "ADD WIKEY", "ADD PINKEY" and "ADD 4HEAT".
  - WiKEY: select "ADD WIKEY" and follow the indicated process;
  - PinKEY: select "ADD PINKEY" and follow the indicated process;
3. 4HEATModule creates a Temporary Wi-Fi network to which you have to connect with your Smartphone. To connect your Smartphone to WiFi, you have to go to Settings -> Wi-Fi on your Smartphone, where the WiFi list appears and you have to select "WI-FI 4HEAT". If the Smartphone asks to stay on this Wi-Fi network, you must accept it, otherwise the configuration cannot be done. In this way, the 4HEAT Module will be linked to the app and the associated account.
4. How to activate "WI-FI 4HEAT" with the different Modules:
  - WiKEY: press key (c) for 3 seconds until the green LEDs do not start to flash, then press key (b) and the WiFi LED (a) starts flashing;
  - PinKEY: press key (b), the Wi-Fi LED(a) will start to flash.
5. Enter a device name and a PIN of your choice. Each 4HEATModule device has its own name and password.
6. Once the app and the 4HEATModule are connected, you are asked to choose the home Wi-Fi network that the 4HEATModule device should connect to;





7. Make sure that the smartphone is connected to the home Wi-Fi connection again and that the LEDs remain steady, allowing you to continue with the configuration phase.



☞ If the configuration procedure was not successful, you can reset the 4HEATModule by holding down the button for 10 seconds. If it is the WIKEY device, it is necessary to press the button (c) for three seconds (only if the three green LEDs are not flashing) and then press the button (b) for 10 seconds.

☞ Images and descriptions may vary depending on the device you are configuring on.

After completing the 4HEATModule device installation procedure, we recommend that you close the application and restart the app.

**On Apple devices:**

- Double press the Start button
- from the 4HEAT application to close it.

**On Android devices:**

- Press the lower right button for devices with soft keys or the lower left button for devices with fixed keys
- Swipe the 4HEAT app preview to the left to close it.

The procedure may differ from one smartphone to another smartphone.



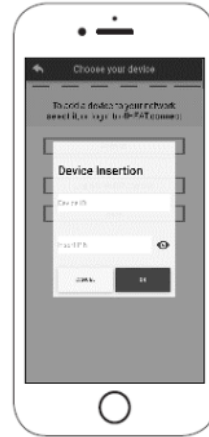
## 10.6. Connection to 4HEATModule

In the "FIND DEVICE" section it is possible to connect to the 4HEATModule by entering the PIN code, only if the 4HEATModule is connected to the same Wi-Fi as the smartphone.

You can also connect remotely (by connecting your smartphone data) by entering the access credentials of the 4HEATModule device already configured.








*Conectado a la misma red WI-FI*



*Con*



**Settings**  
Access to the settings of the associated device.

-  Operating state OFF
-  Operating state lock
-  Operational status ON
-  Device not connected or inaccessible
-  Update required

## 10.7. App management

When entering the already configured App, a help menu will appear that you can consult as many times as you need for better use.

# 11. MAINTENANCE

## 11.1. Security measures

Before starting maintenance work, you must ensure that the stove is disconnected from the electricity supply, that the stove is cold and the ashes are extinguished.

Turn off the main power switch located on the rear panel, right side, and the corresponding cable.

Use suitable cleaning equipment.

It is recommended to use a vacuum cleaner suitable for ash.

## 11.2. Maintenance by the user

### 11.2.1. Daily cleaning

Due to the accumulation of ash in the brazier in your equipment, which may cause failure to light or lack of performance, it is necessary to clean it daily.

Carefully clean the brazier, ensuring that all holes are clear.

It is natural for "stone" to form at the base of the brazier, this phenomenon largely depends on the quality of the pellets used.



Figure 5- Brazier

Put the brazier back in place ensuring the perfect alignment of the resistance hole with the respective resistance. Incorrect alignment can cause ignition failure.

### 11.2.2. Weekly cleaning

#### Glass cleaning

Wait for the glass to be completely cold, otherwise it will break. The weekly cleaning of the glass should be done with a damp cloth or paper mixed with a little ash rubbing until it is clean.

You can use special products or foams for neoceramic glass by placing it directly on a cloth or paper, but never projecting it directly onto the glass.

**IMPORTANT**, do not let the product run down to the metal parts as it will cause corrosion and quickly deteriorate your stove.

#### Ash cleaning

The cleaning of the compartment that houses the ash box must be carried out from week to week or when necessary.

To clean it, it is necessary to remove the ash box using the process explained below.

The compartment must be cleaned using an ash vacuum.

Open the combustion chamber door, remove the brazier and vacuum the ash using an ash vacuum.

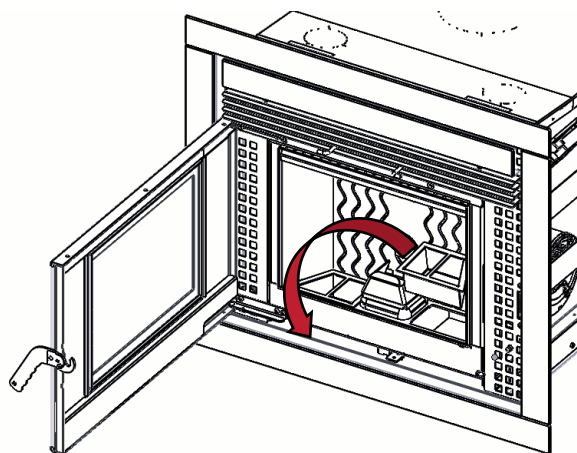


Figure 6- Removing the ash drawer

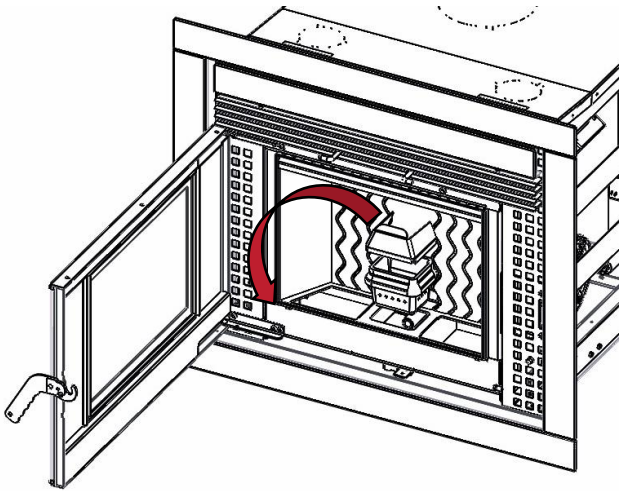


Figure 7- Remove brazier

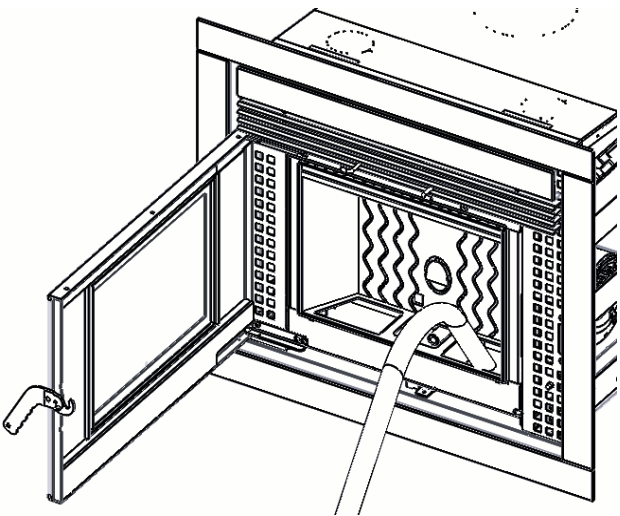



Figure 8- Vacuuming the ash compartment

Dump the ash from the drawer, and with the aid of an ash vacuum cleaner, vacuum the ash compartments.

 Attention: Always place the ash drawer in its place, ensuring that it fits correctly into place. If **the ash drawer is not properly placed, the stove will not work.**

### 11.2.3. Semi-annual cleaning

You must periodically clean the smoke collector stove or for every 600 kg of pellets consumed.

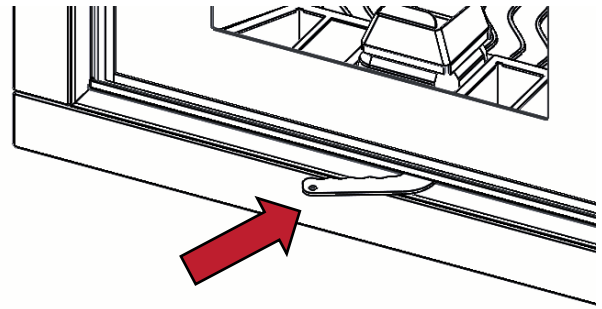


Figure 9- Place to insert the key for opening the stove (only for maintenance and with the stove turned off and cold)

With the door open insert the key under the lower grille and pull out the stove.

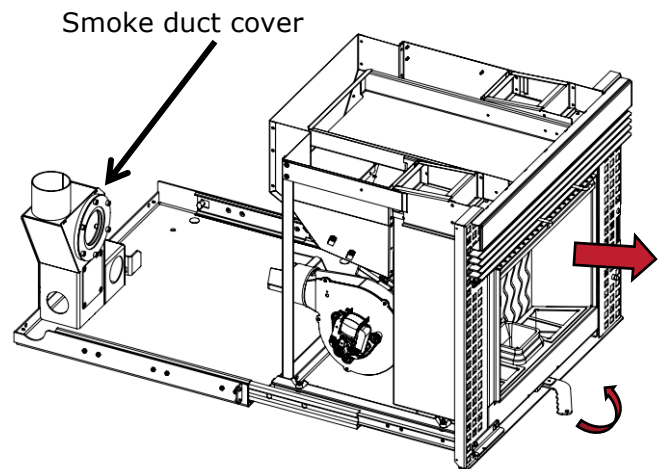


Figure 10- Cleaning the smoke duct (only for maintenance and with the stove turned off and cold)

Remove the smoke duct sealing and vacuum properly.

Remove the interior vermiculite and separating plates from the smoke duct and clean the exchange surfaces with a vacuum cleaner and a brush.

To close the stove, push it backwards until you hear a "click" on the latch. Pull to make sure it's really locked in place.

If you cannot turn it on, check that it has been properly closed, because only when it is closed does it work.

### 11.3. Complete cleaning - Technician

At least once a year, you should call a specialized technician to carry out a complete cleaning of your stove, completely eliminating ash and other residues and all encrustations that are in the exchanger.

This procedure is of great importance to minimize the effects of corrosion. Do not use liquids for cleaning. If necessary, use a spatula or wire brush beforehand.

In this cleaning, the technician must also include cleaning the smoke extraction fan.

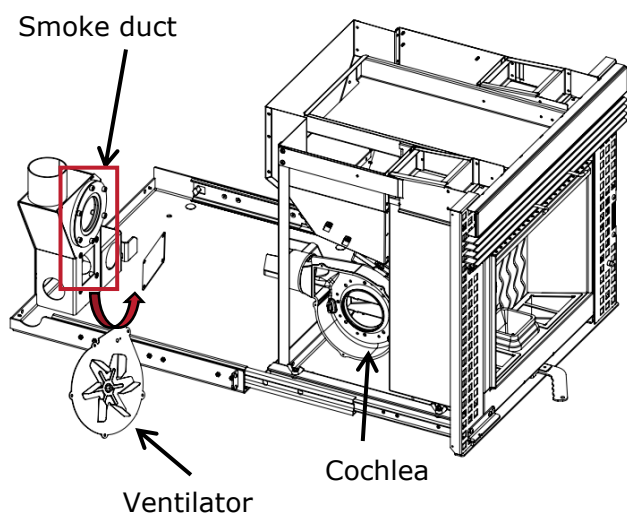


Figure 11- Cleaning the smoke duct (only for maintenance and with the stove turned off and cold)

Carry out the annual cleaning of the smoke extraction fan, being very careful not to damage the blades.

To close the stove, push it backwards until you hear a "click" on the latch. Pull to make sure it's really locked in place.

If you cannot turn it on, check that it has been properly closed, because only when it is closed does it work.

In the annual inspection or every 1500 hours of service, the smoke duct sealing gasket must also be replaced (marked in Fig. 11).

#### 11.3.1. Chimney cleaning

Chimney cleaning should be carried out at least twice a year at the beginning and middle of the winter season or when necessary.

This cleaning must be carried out with an 80 mm nylon or steel brush.



Figure 12- Cleaning brush for pellet equipment

To facilitate cleaning, in particular all chimney encrustations, you should use appropriate pellets for cleaning at intervals.



Figure 13- Cleaning Pellets

In the horizontal sections, it is where more ash naturally accumulates so it is necessary to pay special attention to the cleaning of these deposits.

Note that inadequate cleaning of the stove and chimney will result in poor combustion and consequent reduction in performance, dirty glass, accumulation of incrustations inside the stove body with consequences for the safety and lifespan of the stove.

### 11.3.2. Door check

Check the condition of the door and glass sealing gasket. A seal in poor condition causes poor and incorrect combustion with a consequent reduction in efficiency.

Replace the seal cord whenever it does not guarantee correct tightness.

Carry out the same check for the ash drawer correct closure.

### 11.4. Exterior cleaning

Clean with a dry, non-abrasive cloth.

Do not use water or detergents during the cleaning process as if it comes into contact with the metallic structure (iron, cast iron, sheets) it can cause corrosion of the structure and/or scrape the paint.

### 11.5. End of season maintenance

At the end of the heating season, you must have your fireplace maintained by a specialized technician.

This maintenance is intended to ensure the operability of your equipment and ensure the perfect functioning of all its components.

## 11.6. Control and maintenance program

	Daily	Weekly	Monthly	6 months	Yearly	
					User	Technician
Brazier	X				X	
Cleaning the exchanger (activate the mechanism on the grid)	X				X	
Ash compartment		X			X	
Glass		X			X	
Ignition resistance tube cleaning		X				X
Structure of the stove			X		X	
Smoke Collector			X			X
Door trim and brazier						X
Chimney flue				X		X
Fans						X
General check of the smoke circuit						X

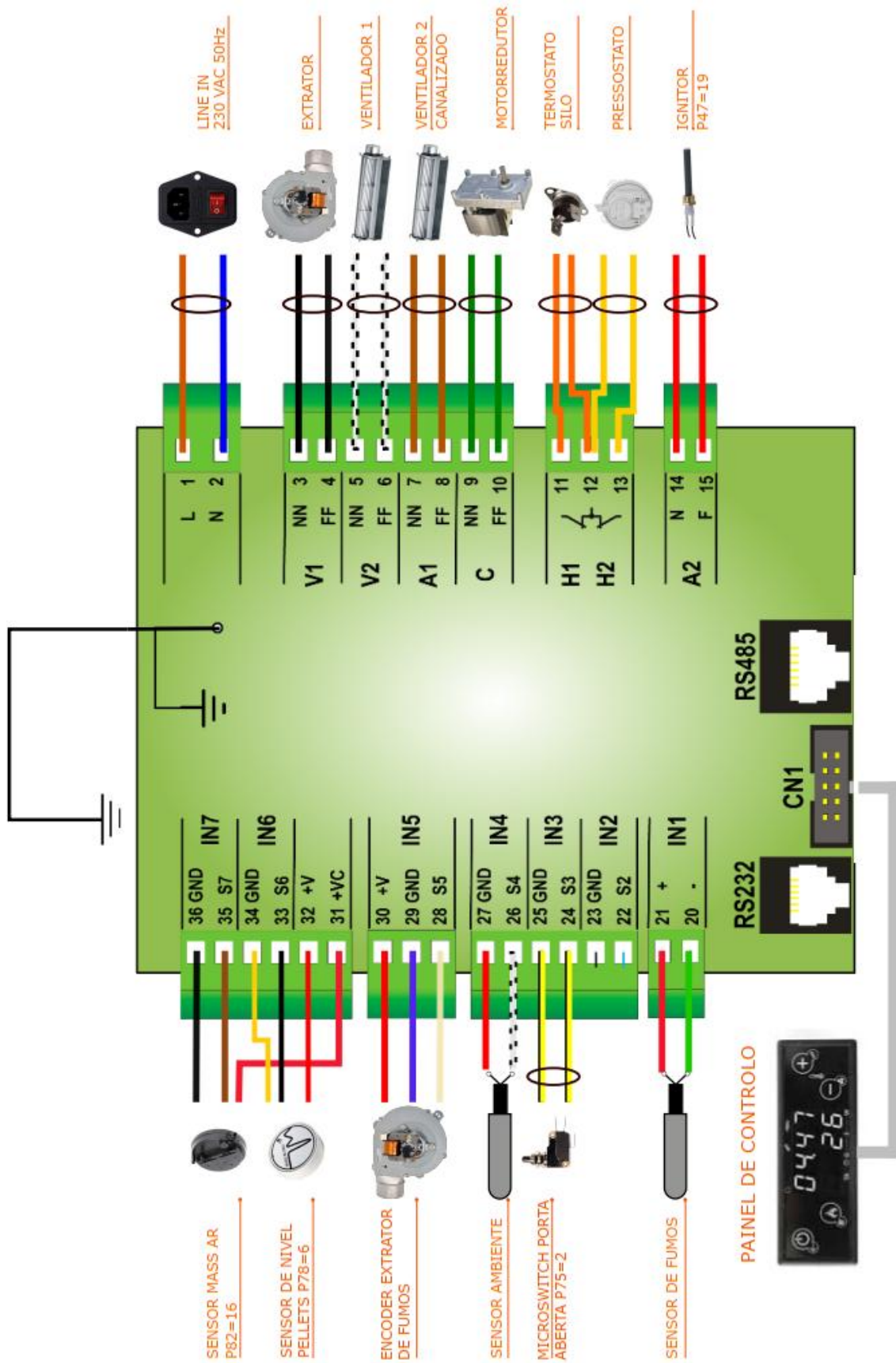
## 12. ERROR CODES

	<b>Origin</b>	<b>Cause</b>	<b>Action</b>
Er01	Auger or boiler safety thermostat It occurs if the hopper (85°C) or boiler (95°C) limit temperature is exceeded.	The water is not circulating. Circulator pump blocked with dirt, installation with air in the circuit, or closed radiator valves.	Check the installation. Wait for the boiler or auger to cool down and for the message Stop or OFF to appear on the display.
Er02	Combustion chamber safety pressure switch. Occurs if the combustion fan cannot make a depression in the combustion chamber greater than 20Pa.	Chimney clog. Door or ash drawer not properly closed. Loose door cord. Silicone tube or clogged pressure socket. Return of wind through the chimney	Check chimney cleanliness Check the door and seals. Check the pressure gauge of the pressure switch.
Er03	Smoke temperature sensor Extinguishing combustion due to low smoke temperature, lack of fuel Occurs if the smoke temperature drops below the minimum value set for extinguishing.	Lack of fuel Low calorific fuel Too-down correction of pellet recipe	Refill hopper  Check fuel quality and replace.
Er04	Boiler temperature sensor Exceeded boiler water temperature (90°C).	Circulator pump blocked, air in circuit or any valve closed or blocked.	Check the installation. Wait for the boiler or auger to cool down and for the message Stop or OFF to appear on the display.
Er05	Smoke temperature sensor Extinguishing combustion due to excessive smoke temperature.	Lack of cleaning of the smoke circuit. Lack of dissipation, obstructed or blocked ambient fan. Correction too upwards of the pellet recipe	Perform boiler maintenance. The exchange circuit will be closed. Check pellet recipe normal value 0.
Er07	Combustion fan encoder. Combustion fan encoder error: Occurs if the rotation signal is not received by the controller.	Check the plug and connecting cable on the fan and controller	Reset the error and restart the boiler, if the error persists, call a technician.
Er08	Combustion fan encoder. Occurs if the controller is unable to obtain rotational speeds according to the value defined by it.	Check the plug and connecting cable on the fan and controller Possible fan or encoder malfunction	Reset the error and restart the boiler, if the error persists, call a technician.

Er09	Water pressure sensor Occurs if the boiler water pressure drops below 0.4bar	Water pressure dropped below 0.4bar.	Check the water pressure, identify possible leaks in the installation.
Er10	Water pressure sensor Occurs if the water pressure exceeds the value of 2.4 bar	Check the auto-fill valve, it may be blocked. The installation does not have an expansion vessel capable of accumulating the expansion of water by heating it. When the water reaches 75°C, the pressure must not rise by more than 0.5 bar.	To check for the lack of expansion capacity, set the pressure with the boiler cold at 1.2 bar, turn on the boiler and when it is at 75°C check the pressure. If it rose by more than 0.5bar, the lack of an additional expansion vessel is confirmed.
Er11	Internal clock error Incorrect day and time due to prolonged absence of power supply	The boiler has been disconnected from power for a long time and the internal battery has discharged, losing the programming.	Call a technician.
Er12	Smoke temperature sensor Misfire The smoke temperature did not reach the ignition setpoint (+/-50°C) and after this value it did not rise by another 5°C.	Lack of pellets in the auger Blocked auger Pellets with high moisture content Brazier obstructed End of life igniter	Check the level of pellets in the auger, clean the burner and check the resistance against the burner
Er15	Lack of supply voltage 230V, A power failure has occurred	Lack of electricity	Check outlet, electrical panel.
Er16	RS485 communication error Occurs when communication between controller and panel fails	Lack of communication between panel and controller	Check plug or cable. Reset and reconnect.
Er17	Air flow meter error Occurs if the chimney is clogged	Check sensor connections Check chimney, possible obstruction. Open ash door or drawer	
Er18	Pellet level sensor It only occurs if the equipment is equipped with a pellet level sensor Pellet level does not cover sensor	Auger without pellets	Fill auger
Er23	Boiler sensor, DHW open circuit.	The boiler is programmed to read one or more of the following sensors and has not detected them: Boiler temperature DHW temperature	Check sensor connection In case the boiler does not have DHW, it must be deactivated by changing the following parameters P26=5 and P83=0
Er39	Air flow/mass sensor Damaged sensor		Change sensor Call a technician.
Er41	Air flow/mass sensor	Possible obstruction of the chimney or air intake. Open ash door or drawer	Clean the chimney. Check door seal and ash drawer

	During the Check Phase Up the boiler makes the exhaust capacity diagnosis. Minimum reference value not reached.		
Er42	Air flow/mass sensor During the Check Phase Up the boiler makes the exhaust capacity diagnosis. The maximum reference value has been exceeded	Maximum air flow reached, excessive chimney draft.	The use of swivels or fans in the chimney is not allowed.
Er44	Open door error		Check door lock or ash drawer. Check the cord.
Er56	Hydraulic scheme different from boiler configuration		
SerU	Notifies that the planned hours of operation (parameter T66) are reached. Periodic review is required.		Call a technician for maintenance and service message reset.

# 13. ELECTRIC SCHEME



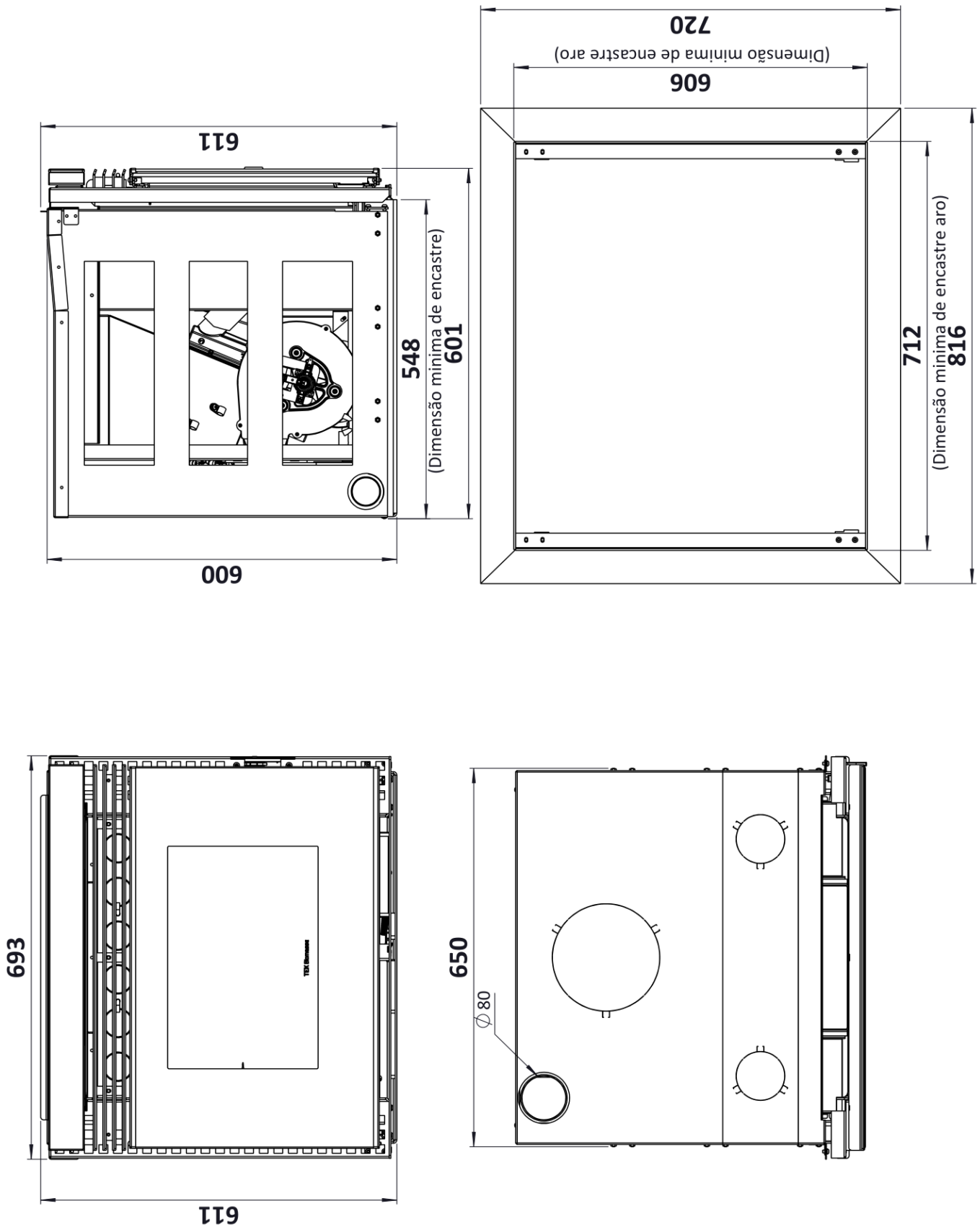
## 14. MODELS AND TECHNICAL CHARACTERISTICS

Models		Neotek	
		Pot. Term. Nominal	Pot. Term. Reduced
Weight	kg	92	
Height	mm	600	
Width	mm	693	
Depth	mm	601 (548 recessed)	
Heating volume	m <sup>3</sup>	240	
Thermal power	kW	7.9	4.8
Pellet consumption	kg/h	1.98	0.99
Autonomy	H	6.50	12.1
Performance	%	86	85
% CO to 13% O <sub>2</sub>	ppm	0.01	0.01
Mass flow of smoke	g/s	7.52	6.99
Minimum chimney draft	Pa	12	10
Smoke temperature	°C	142	91
Absorbed electrical power	W	150*	82
Auger	V   Hz	230	50
Pellet deposit capacity	kg	13	
Smoke outlet diameter (male)	mm	80	

\*Only on ignition



# 15. DIMENSIONS



Authorized Agent



**VITOR MONTEIRO**  
GRUPO

Office and Factory 1:

Estrada dos Guilhermes, 27  
2405-012 Maceira LRA

Portugal

Factory 2:

Moinho de Vento, 1-E  
2405-008 Maceira LRA

Portugal

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Phone: +351 244 770 240

+351 968 020 460

Email: [tekbiomasse@grupovm.pt](mailto:tekbiomasse@grupovm.pt)