



# HIGH HEAT RETENTION STORAGE HEATER

INSTALLATION MANUAL AND INSTRUCTIONS FOR USE

Smart charging  
WiFi control  
TFT display



## ThermaStore **HHR**

By Electrorad



# GENERAL WARNINGS

## INTRODUCTION

Before proceeding with the installation of the product, you must read all the instructions and recommendations detailed in this manual very carefully, as the manufacturer will not be held responsible for any failure or damage caused by non-compliance. Once the heater has been installed, keep this manual in a safe place so that it can be consulted at any time and in case of doubt.

### **VERY IMPORTANT!**

- **Read the installation manual before mounting the equipment.**
- **Read the manual carefully to operate the equipment.**
- **Observe the warnings carefully.**
- **Install the equipment in a place where air can circulate.**
- **The installation of the device must be carried out by qualified personnel.**
- **Remove the battery protector on the electronics before use.**



After unpacking the appliance, the remains of the packaging must be removed in a responsible manner, as all parts of the packaging are intended for recycling. If, after unpacking, you detect any apparent damage to the appliance, you should consult your supplier before proceeding with the installation and electrical connection within a period of less than 24 hours. Assembly and installation must be carried out in accordance with the instructions given in this manual.

## RECYCLING



Warnings for the correct disposal of the product according to European Directive 2012/19/EU. At the end of its useful life, the product must not be disposed of with municipal waste. It can be handed over to specific separate collection centres set up by local authorities or to distributors who provide this service. Disposing of a household appliance separately means avoiding possible negative consequences for the environment and health resulting from inappropriate disposal and allows the materials of which it is composed to be recycled, thus obtaining significant savings in energy and resources. To underline the obligation to collaborate with selective collection, the product is marked with a warning not to use traditional containers for its disposal. For further information, please contact your local authority or the shop where you purchased the product for disposal..

## IMPORTANT SAFETY NOTES

The installation of the heating device must be chosen correctly and must be carried out according to the rules and in compliance with the standard.

The device must be placed away from flammable objects and children must not be left unattended near the heater.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruc-

## GENERAL WARNINGS

tion concerning use of the appliance in a safe way and understand the hazards involved.

Children from 3 years of age and under 8 years of age must not plug in, adjust, clean or service the appliance.

Children under 3 years of age should be kept out of reach of the appliance unless continuously supervised.

Children from 3 years of age and under 8 years of age should only switch the appliance on/off when it has been placed and installed in its normal intended operating position and when they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

Children should be supervised to ensure that they do not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

**Caution: Some parts of this product may become very hot and cause burns. Particular care should be taken when children and vulnerable persons are present.**

Under no circumstances should the equipment be covered by clothing, containers or any other object, nor should it be placed under a cupboard or any other obstacle that impedes the circulation of hot air.

### **WARNING:**

**To avoid overheating, DO NOT COVER the heating appliance heating appliance.**



The heating appliance must not be placed immediately below a socket outlet.

Avoid the use of extension cords as they may cause overheating and a risk of fire.

This appliance is intended to be permanently connected to a fixed ins-

## GENERAL WARNINGS

tallation. The power supply circuit of the device must be fitted with an omnipolar circuit breaker with a contact separation of at least 3mm.

The connection cables of the heater itself must not come into contact with the surface of the device.

The device must not be installed in places where there is a risk of splashing water, such as bathtubs, washbasins, etc. The appliance must be installed in such a way that the switches, thermostat and socket cannot be touched directly or indirectly by a person in the bath or shower (respect the prohibition distances according to IET).

If the power supply cable is damaged, it can only be replaced by the Technical Assistance Service in order to avoid risks.

If, during installation and assembly of the appliance, a part of the thermal insulation or resistance shows damage or deterioration that impairs the safety of the appliance, it must be replaced with an identical part.

**Before carrying out any operation inside the appliance, do not forget to disconnect the power supply.**

Contact with the core temperature probe may cause an electrical hazard. The probe must not be handled, moved or touched.

Never open the appliance when it is charged.

The presence in the environment of tobacco smoke or suspended particles, atmospheric pollution, etc., can darken the wall surfaces near the heater.

Always observe the safety precautions when mounting the heater on the wall.

The electrical installation should be fitted with a fused switch or circuit breaker. It is also advisable to have a residual current protection against earth faults. The voltage and frequency values of the mains supply must

## GENERAL WARNINGS

be the same as those indicated on the rating plate.

It is possible that the radiator may cause slight noises at the beginning of its operation; this is normal due to expansion and contraction. After a few days, this noise disappears.

After the unit has been re-installed in another location, it will be put into operation for the first charging period under the control of the installer.

Due to the weight of the heater, it must be ensured that both the wall and the supporting floor are sufficiently solid, in case of doubt consult a building engineer.

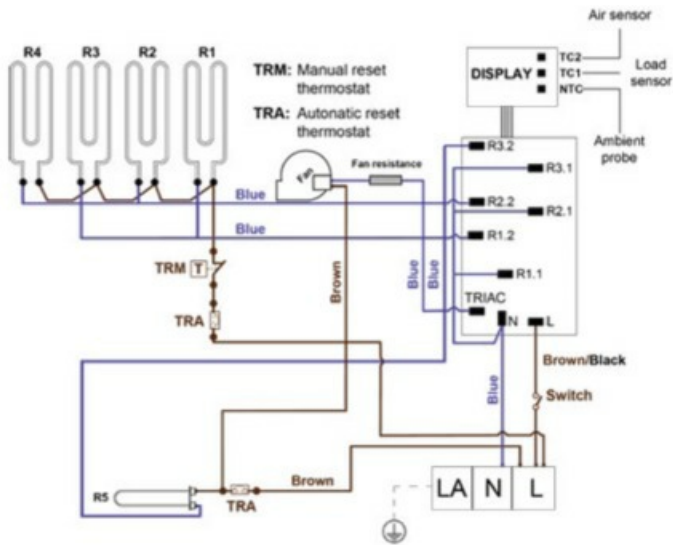
To maintain stability, it is essential that the heating appliance is placed on a level surface and care should be taken to avoid uneven surfaces.

### ELECTRICAL CONNECTION

- For the electrical connection of the device, means of disconnection to the fixed installation must be incorporated in accordance with the installation regulations in force in the country in which it is to be installed.
- For safety reasons, before making the connection, check that there is no voltage in the mains.
- Before connecting the appliance to the mains, make sure that the supply voltage is as indicated on the rating plate 230V.
- The appliance must be connected to the protective conductor of the fixed installation.
- Any incident resulting from non-compliance with these instructions will invalidate the warranty.
- When connecting the appliance, the wiring diagram must be strictly observed, paying special attention to the colours of the wires.

# WIRING DIAGRAM

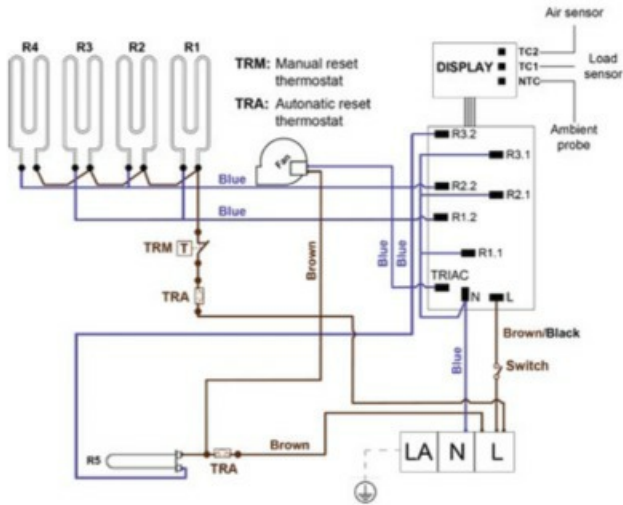
## Electronics version 1.7



Input power (W)	Nominal Charger 7h (kWh)	Emission power (W)	Bricks	Resistances	Power (W)	R5 (W)	V	Measures	Weight (kg)
1650	11,55	625	12	R1, R2	815x2	575	240	715x743x180	93,5
2550	17,85	950	18	R1, R2, R3	815x3	860	240	925x743x180	130,0
3400	23,80	1275	24	R1, R2, R3, R4	815x4	1150	240	1035x743x180	170,0

Check the version of your equipment on the technical serial label located at the bottom of the left side.

## Electronics version 1.8



Input power (W)	Nominal Charger 7h (kWh)	Emission power (W)	Bricks	Resistances	Power (W)	R5 (W)	V	Measures	Weight (kg)
1650	11,55	625	12	R1, R2	815x2	575	240	715x743x180	93,5
2550	17,85	950	18	R1, R2, R3	815x3	860	240	925x743x180	130,0
3400	23,80	1275	24	R1, R2, R3, R4	815x4	1150	240	1035x743x180	170,0

Check the version of your equipment on the technical serial label located at the bottom of the left side.

## CLEANING AND WARRANTY

### CLEANING

Before cleaning, switch off the product and allow it to cool down. If there is dirt on the outside, it can be removed with a dry cloth. Do not use solvents or abrasive products. A vacuum cleaner can be used to remove any dust that may have gathered in the ventilation grille.

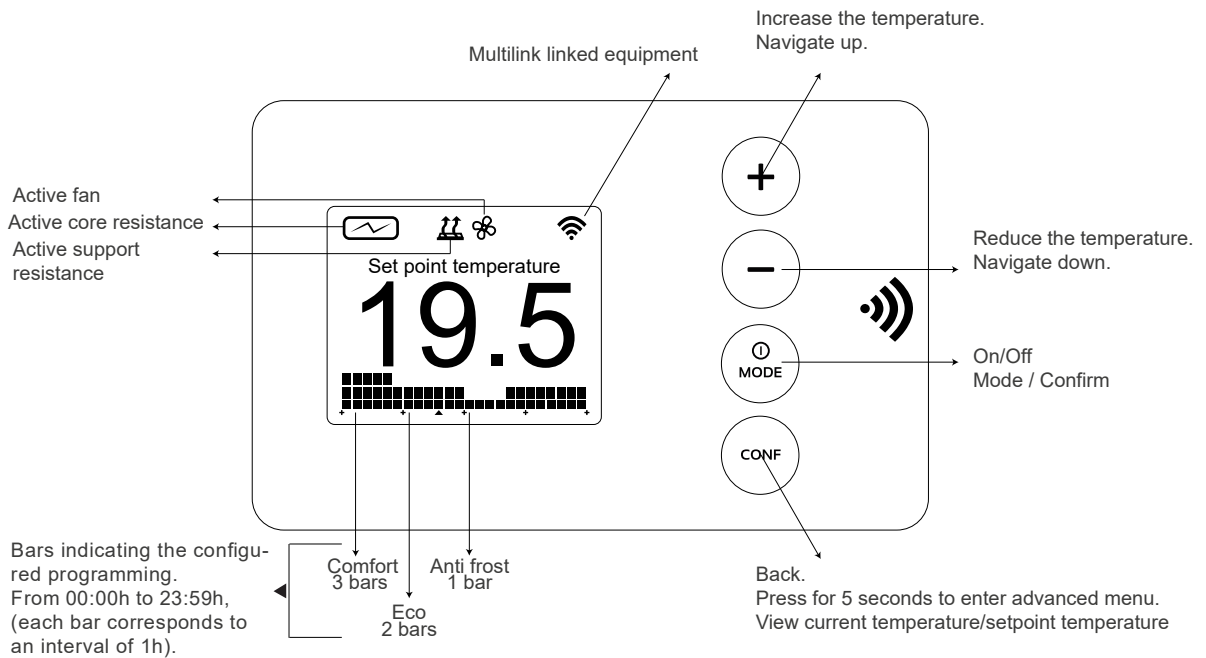
### WARRANTY

The company offers a 10 year warranty on the heater body and 2 year warranty on the electronics and thermostatic control.

#### *Prerequisites:*

- The warranty only covers manufacturing defects or any problems caused by such defects.
- Any problems resulting from insufficient installation or power (not enough power to heat the room, incorrect installation, etc.) are not covered by this warranty.
- This radiator is for domestic use, installation in any other environment is not guaranteed.
- The manufacturer reserves the right to decide whether to repair any defective parts or replace the entire unit.
- All costs resulting from damage caused by misuse, transport, improper power supply, are not covered by this warranty.
- If the appliance is not installed or positioned as indicated in this manual, the responsible company will not be liable for any damage caused by misuse.
- Any improper handling will invalidate the warranty.
- In the latter case of recourse to legislation, both parties will be under the jurisdiction of the courts of the manufacturer's province.

## EQUIPMENT CONFIGURATION



### PROGRAMMING

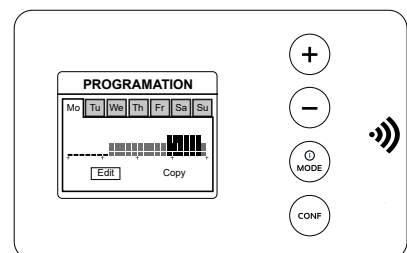
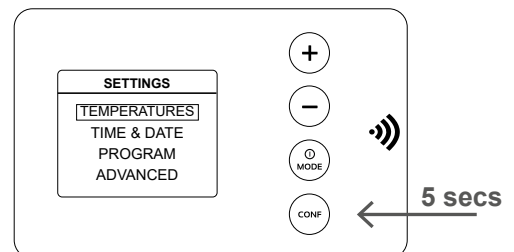
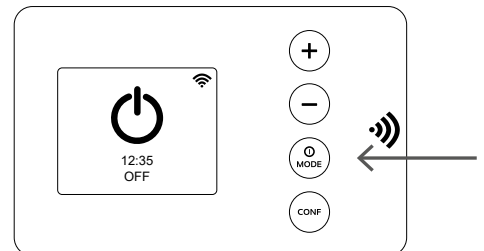
Press the “MODE” button to switch between (ON) and (STANDBY[V1.7]/OFF[V1.8]) states.

In either of these modes, press and hold the “CONF” button to access the SETTINGS option. In this screen, the following options will be found (use the + or - keys to scroll through them and confirm with the “MODE” button):

**Temperatures:** In this option, it is possible to set the Comfort, Eco and Anti-frost temperatures. The predefined values will be those used in PROGRAMMING. By default, the values are: Anti-frost: 5°C, Eco: 18°C, Comfort: 21°C.

**Time and date:** This option cannot be accessed if the device is connected to the Internet. Here you can change the time, date and format (24h/12h am-pm). To make changes, use the +/- keys to scroll to the desired option and press the “MODE” button. Once inside the time or date option, press “MODE” until the selection flashes, adjust the value with the +/- keys and press “MODE” again to confirm..

**Programming:** If the operating mode is FIXED TEMPERATURE, this option will be disabled. In this section, it is possible to set the weekly programming by choosing, for each hour, one of the available modes (Comfort, Eco or Anti-frost).





## EQUIPMENT CONFIGURATION

To modify a specific day, select the desired day using the +/- keys and confirm with the "MODE" button. Then, choose between the edit or copy options using the +/- keys and confirm again with "MODE".

If edit is chosen, scroll through the hours with the +/- keys and change the mode with the "MODE" button.

Once you have set the temperature for one hour, scroll with the +/- keys to the next hour you wish to set and repeat the process. Confirm your changes by pressing the "CONF" button. To change another day of the week, press "CONF" again and scroll through the days using the +/- keys.

In the case of selecting the "Copy" option, navigate through the days to which you want to copy the current configuration using the +/- keys and select with the "MODE" button. Confirm with the CONF button.

By default, the programming is configured from Monday to Sunday as follows:

Electronics V1.7

- From 00:00h to 07:00h: Eco Mode / From 07:00h to 23:00h: Comfort Mode / From 23:00h to 00:00h: Eco Mode.

Electronics V1.8

- From 00:00h to 07:00h: OFF Mode / From 07:00h to 17:00h: Eco Mode / From 17:00h to 23:00h: Comfort Mode / From 23:00h to 00:00h: Eco Mode

### Advanced:

Mode of operation: you can choose between:

- Fixed temp.:** In this mode, the device operates at a fixed temperature setting (30°C). This temperature can be changed with the +/- keys. To confirm, wait until the temperature stops flashing (without pressing any buttons).
- Weekly programming:** In this mode, the device follows the temperature programme set in the PROGRAMMING section. After starting the device, a start-up screen appears which can be either the Weekly Programming or the Fixed Temperature mode, only one of the two modes can be active.

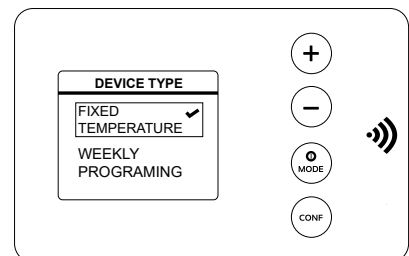
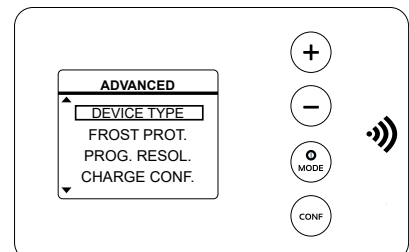
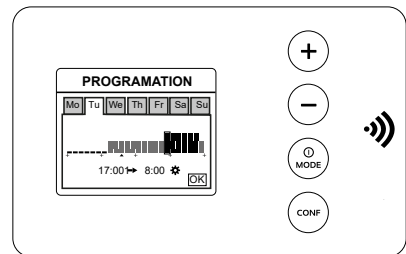
Default value: Programming.

Frost protection: When this parameter is activated, the support resistor will be activated even if the equipment is in Standby mode, as long as the ambient temperature is below 3°C.  
Default value: Disabled.

Program resolution: This function allows you to define whether scheduling takes place every hour or every half hour. Default value: Every hour.

Charge configuration: This function allows you to set the values for the load and the support resistance.

- Backup heater configuration: If the ONLY PEAK option is chosen, the backup heater can be



## EQUIPMENT CONFIGURATION

activated outside the charging period if the fan is not sufficient and the load is low (below 50%). The support resistor can never be activated during the load period. Default value: Peak only.

- **Weekly programming:** With this option you can select the charging period and charging days. Up to two different periods can be chosen, defining the start and end time. The default setting is as follows: a charging period from 00:00h to 07:00h every day.
- **Balancing:** This option allows you to alternate the operation of the heaters every hour during the charging period, significantly reducing the consumption of the heater. The TWO CHARGE and MIXED CHARGE options are only available on the 2450w battery. Default value: Disabled. (Not available on 1600w model).

	HHR 2550	HHR 3400
One Load	1700w - 850w	1700w - 1700w
Two Loads	1700w - 2550w - 850w	-
Mixed Load	1700w - 850w	-
Switching shall always take place every 60 minutes. If charging is stopped and restarted, it shall always be at the beginning of the cycle.		

- **Smart charging:** This option allows you to calculate the excess charge in order to adjust it in the following days. If you deactivate this function, the device will charge daily until the TARGET CHARGE is reached. Default value: On.
- **Target charge:** If the INTELLIGENT CHARGE parameter is activated, you will not be able to modify this option.
- **Current charge:** Allows the user to view the current charge percentage of the heater at that moment.


**Units:** You can select between CELSIUS and FAHRENHEIT. Default value: CELSIUS.


**Display:** You can adjust several aspects:

- **Duration:** Defines the time for which the display light remains active, 10s, 20s, 30s or always. Default value: 10s.
- **Active brightness:** 100%, 75%, 50% or 25%. Default value: 100%.
- **Brightness inactive:** Off, 3%, 10% or 20%. Default value: Off.
- **Style:** You can change the style of the screen between Light B/W, Dark N/B or Colour. Default value: Colour.

**Beep:** You can select between disabled or enabled. Default value: Disabled.

**Control type:** The product control mode can be selected between hysteresis and PID. Hysteresis control operates by the difference between the setpoint temperature and the room temperature, while PID is based on calculations to achieve the set temperature. Default value: PID15.

**Open window:** When this function is enabled, the heater will suspend the heat output when it detects a temperature drop of 1.2°C within 10 minutes. The symbol  will be shown on the display of the device. If any button is pressed or an increase of 0.3°C is detected within 10 minutes, the device will return to its normal state. Default value: Off.

**Smart start**  : When this function is enabled, the heater will activate the support resistance or the fan in advance, in order to reach the desired temperature at the programmed time. The maximum allowed anticipation is 24 hours. Default value: Disabled.

**Offset:** The product offers the possibility to set a compensation temperature in the room temperature sensor. It can be positive or negative. In the editing screen, it is possible to display the compensation value and the corrected room temperature. Default value: 0.0 °C.

## EQUIPMENT CONFIGURATION

Language: you can choose between English, German or Spanish.

**Parameters:** **WARNING, this section could modify the factory settings of the equipment. Only a specialised technician should enter this section, the user should not enter or modify the parameters to avoid improper operation of the product..**

Set defaults: In case you want to set the current configuration of the equipment (the last configuration made) as default values, select YES..

Reset: In this menu you can reset the equipment back to default settings and unlink the device from the Internet.

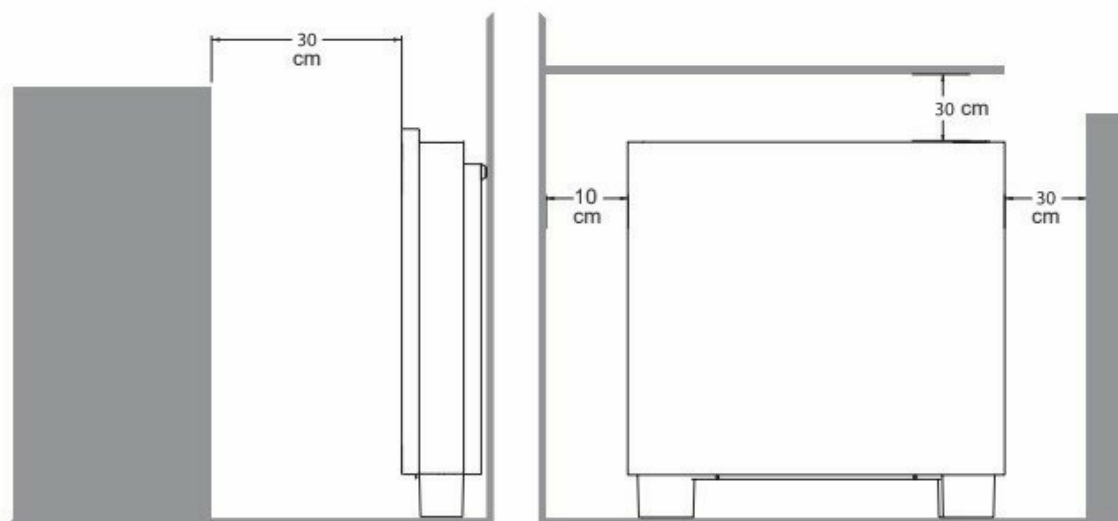
Version: Information about the current version of the electronics, you may need this information in case of a failure or malfunction.

### OTHER FUNCTIONS

- **Boost:** This mode can be used to change the temperature momentarily. You can enter this option having configured any of the previous modes (fixed temperature mode or weekly programming). To activate it, from the main screen, press the +/- button, press CONF to select the temperature and set the time that the active Boost mode will last. Press MODE to confirm.  
If the previous mode was Fixed temperature, the time setting can be; 0h to 5h, all day or forever. If the previous mode was Schedule, by pressing the Config button, you can define the time during which the change is applied. The time setting is selected with the +/- key and can be: 0h to 5h or all day. Accept with MODE. To deactivate the Boost function and return to the previous mode, press the MODE button..
- **Keyboard lock:** The device locks the keys. To activate it, press the + and - buttons for 5s. Repeat this step to deactivate it.

# MOUNTING INSTRUCTIONS

## SAFETY DISTANCES



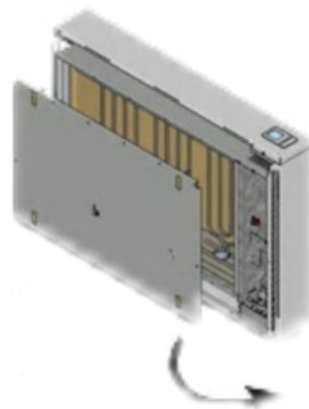
## MOUNTING INSTRUCTIONS

1



Step 1: Remove the three bottom screws. Remove the front panel of the unit.

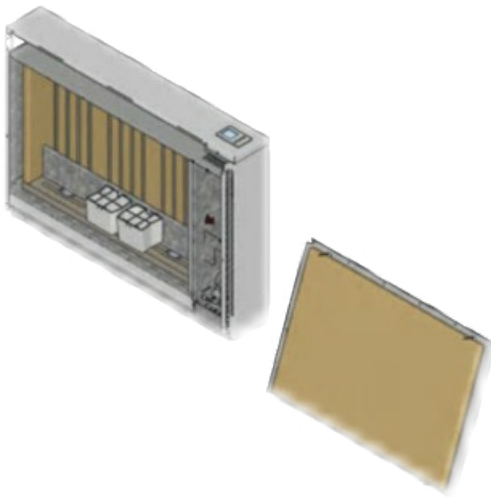
2



Step 2: Remove the screws holding the front insulation panel cover. Remove the front insulation panel cover (very carefully) to access the base kit.

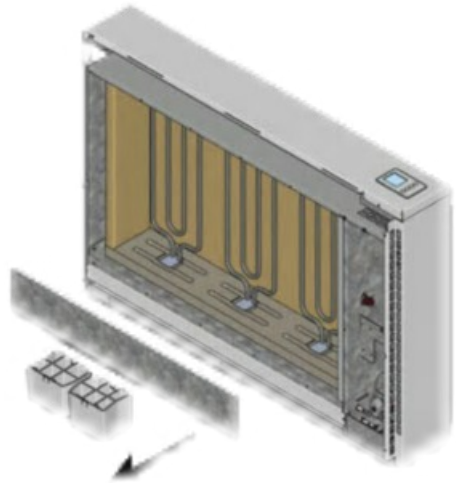
## MOUNTING INSTRUCTIONS

3



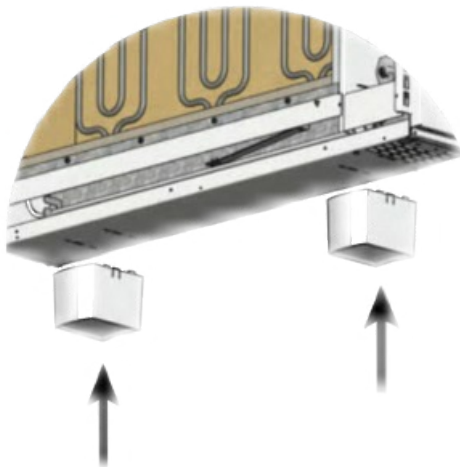
Step 3: Carefully place the front insulation panel on the side of the equipment.

4



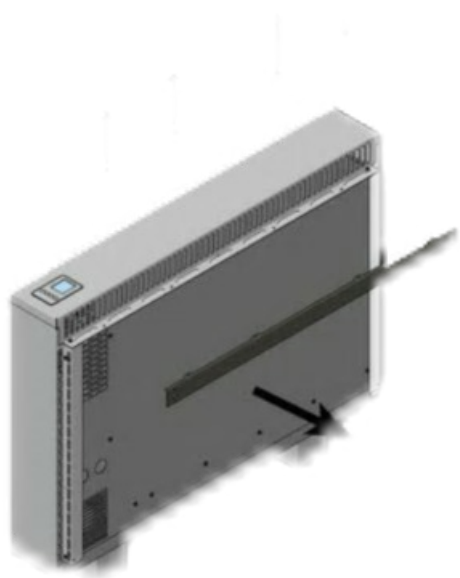
Step 4: Remove the legs and the metal tray inside and set aside.

5



Step 5: Place the feet on the bottom of the heater.

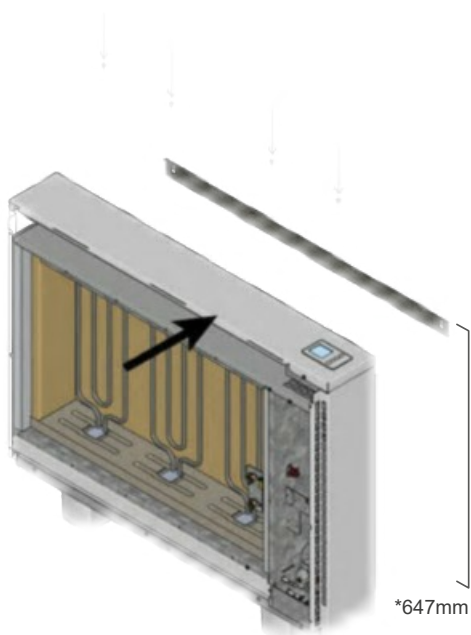
6



Step 6: Unscrew the anchoring bracket at the rear and remove it.

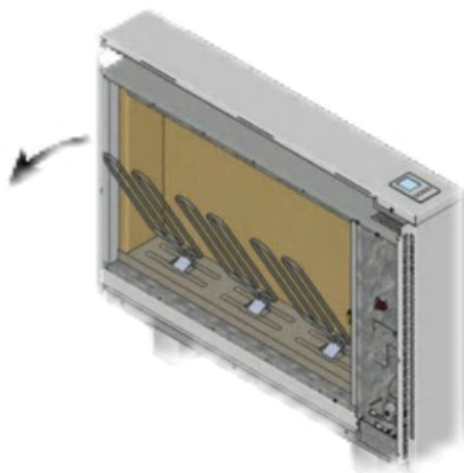
## MOUNTING INSTRUCTIONS

7



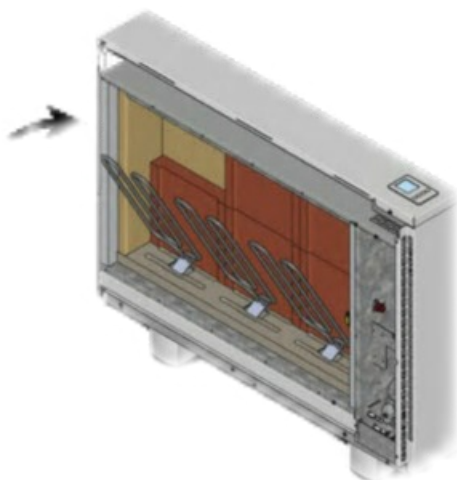
Step 7: Mark and drill the wall. Insert the wall plug into the hole and screw the bracket to the wall being mindful of the required distance to the floor.

8



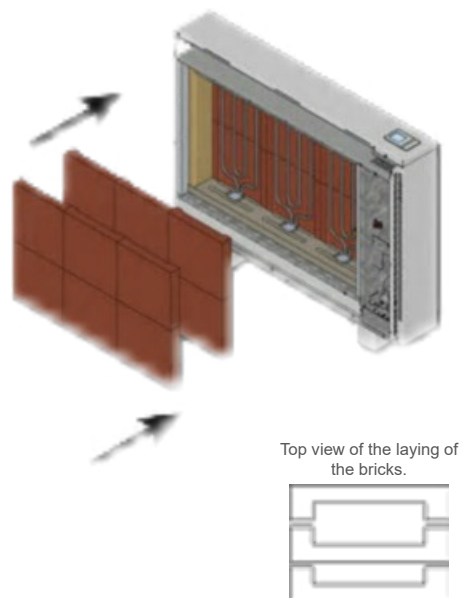
Step 8: Once the heater is in place, tilt the resistors forward as shown in the picture.

9



Step 9: Lay the back row of bricks and place the elements in a vertical position.

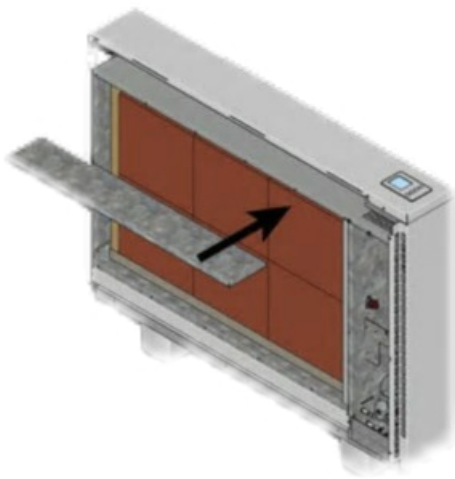
10



Step 10: Install the remaining two rows of bricks.



## MOUNTING INSTRUCTIONS

11

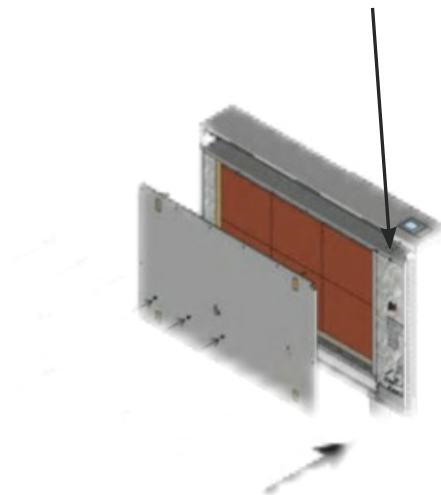


Step 11: Remove the protective film from the metal tray and place the metal tray on top (smooth side up) between the insulation and the bricks.

12

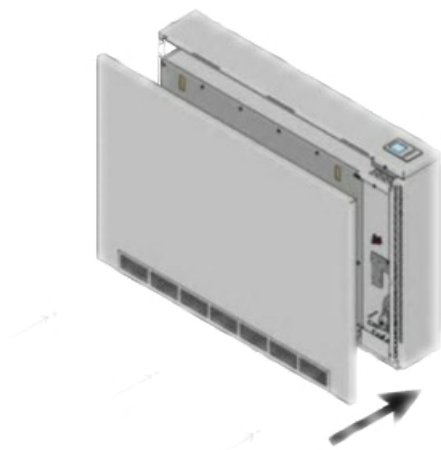
 Remove before use  
Retire antes de usar 

Remove the battery protector on the electronics before use. It is located in the area marked protruding from the electronics by the red part of the label.

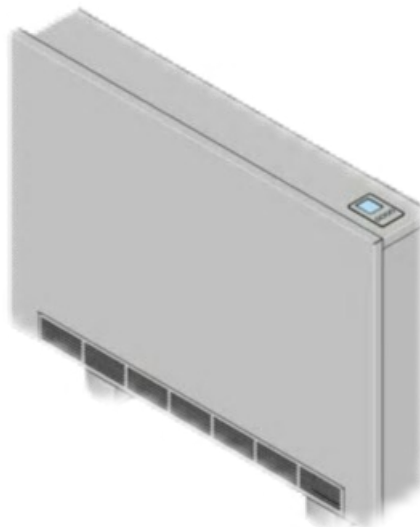


Step 12: Put the front insulation panel in position and screw it in place.

13



Step 13: Fit the front panel and screw it back on.



## TROUBLESHOOTING AND FAQs

ISSUE		ACTION	SOLUTION
<b>No load</b>	Check that there has been a normal power supply during the night		
	Check that the electronics and switch are not in the off position.		Plug it in and regulate it according to your needs.
	Check that the circuit breakers on the power panel are connected.		Connect the corresponding switch.
	If you have a timer in the connection socket, check that it is properly programmed at night.		Schedule properly.
	You have tried the previous points and the anomaly remains. The safety device may need to be reset.		Consult your installer or call Customer Services.
<b>Not hot enough</b>	Check the temperature shown on the display is the desired one.		Increase the load to a higher position.
	Check that the windows in the room have not been left open for a long period of time.		Wait for a new charging cycle and check the behaviour of the heater with the windows closed.
	You have tried the previous points and the anomaly remains.		It's possible that the power of your heater is not well dimensioned for the needs of the premises. Consult your installer or call Customer Services.
<b>Heat excess</b>	Check the selected temperature.		Reduce the load to a lower level.
	You have tried the previous points and the anomaly remains.		Consult your installer or call Customer Services
<b>Stains appear on the wall *</b>	There is construction residue, dust, etc ... in the vicinity of the heater.		Clean extensively around the equipment daily.
	You have pets		Keep them away from the heater especially whilst they are moulting hair.
	You have wool rugs, carpets, etc. near the appliance.		Keep them as far away from the heater as possible.
	It may be that the paint in your home has a high epoxy content or that its composition contains pigments that degrade with heat.		This situation will be confirmed if by passing a damp cloth over the stain it does not disappear.
	You live on the lower floors of an urban building located in a busy area.		Try to keep windows closed as long as possible.
FREQUENTLY ASKED QUESTIONS			
<b>What tariff and power connection do I need?</b>	The heaters are designed to work with economy tariffs so that they can charge using cheap rate electricity. The meter must supply electricity 24 hours a day but switch to the cheaper rate during your economy times. Suitable tariffs are any tariff which gives cheap rate electricity overnight to charge.		
<b>What is the storage heat and what is the booster heat?</b>	Storage heat is heat generated in the core during the off peak period and will be emitted as required by the built in fan. Boost heat will be emitted by the top up heating element if additional heat is required.		
<b>Where is the WiFi Gateway connected?</b>	It can be plugged into the router directly or into a plug (with usb adapter). The operation is as follows: the electronics are connected to the gateway creating a network and then the electronics are connected to the WiFi of the house. The usb will ask for the WiFi key to access.		
<b>What are the temperatures in comfort, economy and frost protection mode?</b>	Comfort temperature is the temperature set when you want a steady warmth i.e during the evening when you might be sitting down for a period. Economy temperature is a background heating when you might be moving around the house during the day. Frost protection temperature is a lower heat setting e.g. 5 degrees celsius when you want to protect your premises against frost.		
<b>What is TRUE RADIANT for?</b>	This is to anticipate the activation of the auxiliary resistance depending on the history of how long it takes to reach the set temperature.		

\* The heaters do not have any combustible elements. The appearance of stains on the wall is rare, and is always due to environmental factors, highlighting those outlined above. The combustion of these particles from dust, hair, pollution etc. can generate the residue that is deposited on the wall..



## ECO-DESIGN

Item	Unit
<b>Calorific power</b>	
Manual control of the heat load, with integrated thermostat.	yes
Manual control of heat load with response to indoor or outdoor temperature	yes
Electronic control of heat load with response to indoor or outdoor temperature	yes
Fan-assisted heating power	yes
<b>Indoor temperature / heat output control type (select one)</b>	
Single level heat output, no indoor temperature control	no
Two or more manual levels, no indoor temperature control	no
With internal temperature control by mechanical thermostat	no
With electronic control of interior temperature	no
Electronic indoor temperature control and daily timer	no
Electronic interior temperature control and weekly timer	yes
<b>Other control options (several can be selected)</b>	
Indoor temperature control with presence detection	no
Interior temperature control with open window detection	yes
With remote control option	yes
With adaptive start control	yes
With operating time limitation	yes
With black lamp sensor	no
<b>Contact information: see back cover</b>	

Data			Value		
Departure	Symbol	Unit	1650	2550	3400
Heating power					
Nominal heating power	$P_{nom}$	kW	1,650	2,550	3,400
Minimum heat output (indicative)	$P_{min}$	kW	N.A.	N.A.	N.A.
Maximum continuous heat output	$P_{max,c}$	kW	1,650	2,550	3,400
Auxiliary electricity consumption					
At nominal heat output	$el_{max}$	kW	1,650	2,550	3,400
At minimum heat output	$el_{min}$	kW	N.A.	N.A.	N.A.
In standby mode	$el_{SB}$	kW	0,0005	0,0005	0,0005

## NOTES





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