ADVANCED INSTALLATION INSTRUCTIONS

Gabarrón

ECOMBI HHR

SMART STORAGE HEATER

ECOHHR20
ECOHHR30
ECOHHR40

Please, read these instructions CAREFULLY before installing or using this appliance for the first time.

1.–IMPORTANT INFORMATION

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons, including the following:

- **WARNING: Please read all instructions before installing or using this heater for the first time.**

- This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces.
- Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, etc. and curtains at least a foot (30cm) from the front, sides and rear of the heater.
- It is essential that the indicated minimum clearances are maintained.
- CAUTION — Some parts of this product can become very hot and cause burns. Particular attention must be given where children and vulnerable people are present.

CURTAIN, PIECE OF FURNITURE

min
10"
250 mm

min
3 "
75 mm

min
3 "
75 mm

OBJECT
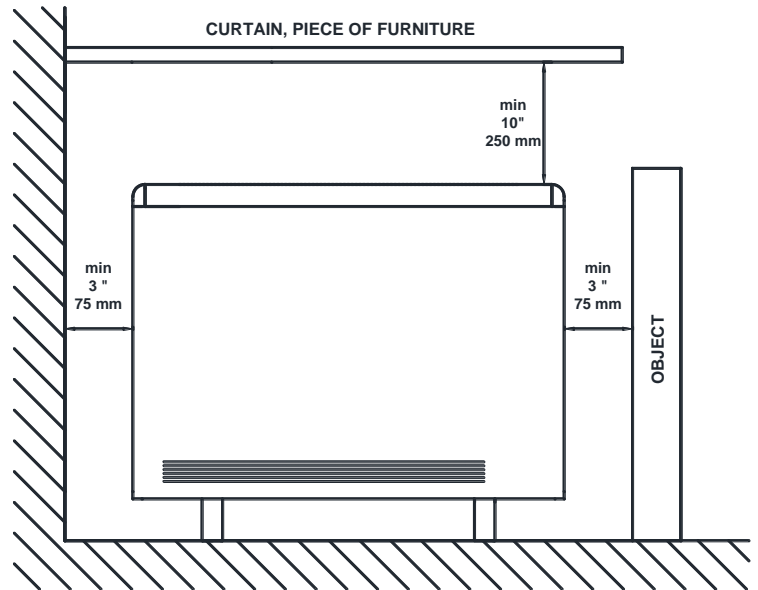
- Children should be supervised to ensure they do not play with the heater.
- Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating unattended.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the use of the appliance in a safe way and understand the hazards involved. Children must not play with the appliance. Cleaning and user maintenance must not be made by children without supervision.
- Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.
- Children of less than 3 years should be kept away unless continuously supervised.
- Do not operate any heater after it malfunctions. Disconnect power at service panel and have heater inspected by a reputable electrician before reusing.
- Do not use the heater outdoors.
- To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel.
- Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
- To prevent a possible fire, do not block air intakes or exhaust in any manner.
- Air inlets and outlets provide proper operation of the appliance and prevent its overheating. DO NOT cover air inlet and outlet grills.
- A heater has hot and arcing or sparking parts inside. Do not use in areas where gasoline, paint, or flammable vapours or liquids are used or stored.
- The automatic fan-assisted discharge may connect at any time to maintain the programmed temperature by the user.
- Do not place anything in the 30 cm in front of the heater. Placing objects in this area could represent a fire hazard.
- Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- This guide must be kept and given to any new user.

SAVE THESE INSTRUCTIONS

2. - INSTALLATION INSTRUCTIONS

The symbols used in the text are explained below:

⚠️ WARNING — This indication shows the possibility of causing death from electric shock.

⚠️ WARNING — This indication shows the possibility of causing death or serious injury.

⚠️ CAUTION — This indication shows the possibility of causing injury or damage to properties only.

ℹ️ Symbol for useful information.

IMPORTANT: Wiring procedures and connections shall be in accordance with the national and local codes having jurisdiction.

- The warranty of the heater will not cover any damage caused by non observance of any of these instructions.
- The installation must be carried out in accordance with the current local electrical regulations. Any installation or reinstallation has to be carried out by an experienced technician.
- Please check that the voltage in the rating label fits the power supply.
- This appliance must be grounded.
- The appliance should not be installed just below an electrical socket.
- The appliance must be installed in such a way that it is impossible for anyone using a bath or shower, to touch the controls.
- If during any installation the thermal insulation shows any sign of damage, it must be replaced.
- This heater should be switched off at the circuit breaker before any repair work is carried out. This should also be done during times of the year when heat is not required.
- This appliance is only for permanent connection to a fix installation. After installation a survey of the first charging cycle should be carried out to ensure that the main input thermostat switches off. Ventilate the room during this first cycle.
- Never open a charged heater.
- To maintain stability, it is essential that the heater is placed on a level surface and care should be taken to avoid irregular surfaces, such as may result from carpets or tiled surrounds partially protruding under the heater.
- The presence of air particles of smoke, dust and other pollutants could, in time, discolour the walls and surfaces around the heater.

In order to achieve a correct installation of this device, follow these steps:

1. - Choose the right location to install ECOMBI HHR. The minimum clearances must be respected from the appliance to any combustible material such as furniture or curtains. **To reduce the risk of fire, do not store or use gasoline or other flammable vapours and liquids in the vicinity of the heater.**

2. - Open the carton at the indicated side and install the supporting feet without removing the heater.

Turn the carton upside down to allow the heater to stand on its feet and remove the carton. Check that it is the correct model and that it is in good conditions.

Check that all parts have been delivered and are intact.

- 1 ECOMBIHHR heater casing.
- 1 bag containing 2 screws and 2 dowels and 4 white screws.
- 2 supporting feet.
- This guide.
- 1 superior fixing fitting.
- 2 lateral fixing fittings.

ℹ️ The casing and storage bricks are supplied separately. Check the supplied bricks packages correspond to the ones indicated on the heater carton.

ℹ️ The heater operation is not affected if bricks with minor damage are used.

3.- Screw on the wall the superior fixing fitting, making the two required drills at the recommended distance depending on the model.

1065mm (ECOHHR40)
839mm (ECOHHR30)
613mm (ECOHHR20)
665mm
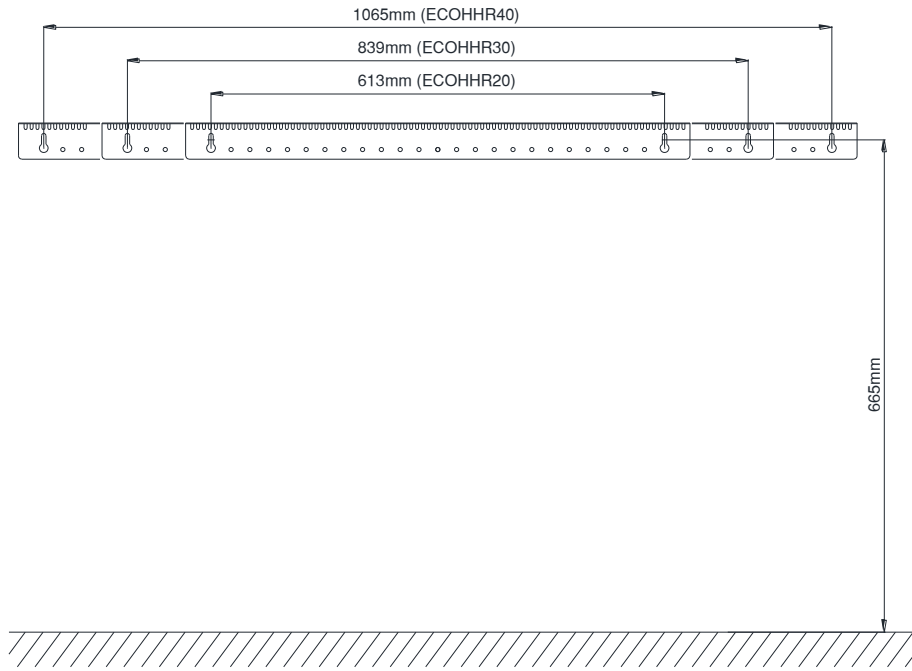
Use the dowels and screws contained in the plastic bag to fix the fitting to the wall.

4. - Fix the lateral fittings to the metal structure by using the appropriate screws. The supply cables must be fitted but not wired to the storage heater before placing the heater to the wall. Remove the white screws located in the top of ECOHHR, and place the ECOHHR in the selected installation area. Use the removed screws to attach ECOHHR to the superior fixing fitting installed in the wall.

ECOHHR MUST NOT BE HUNG ON THE SCREWS; these are used only to prevent the device from overturning and not to support it. If there is any doubt concerning the wall strength, consult the corresponding construction specialist. The appliances are heavy; it is the installer responsibility the correct installation and wall support of these devices to prevent them from overturning.

5. – Take off the front outlet grill by removing the four screws. Take off the front panel by removing the two screws located at the bottom.

6. - Connect the heater using the wiring diagram included at the end of this manual. Tighten properly the connection block screws. Use only silicone insulated cables. Do not leave any remaining wire inside the heater.

⚠ **WARNING** Touching live connections can cause serious personal injury.
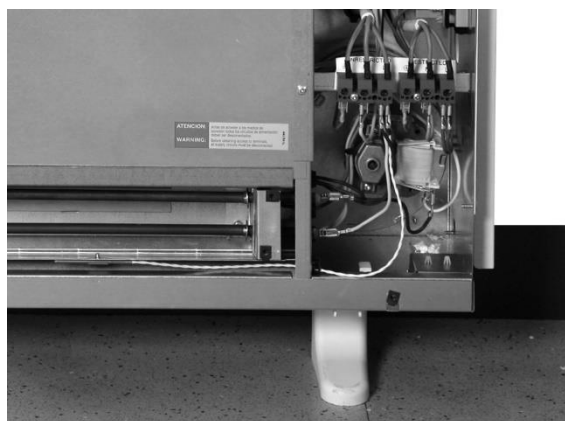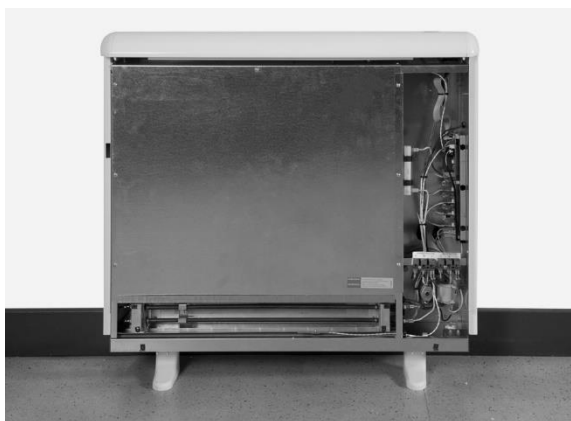
7. - Unscrew the inner panel and remove it.

⚠ WARNING   Steel edges can cut.

⚠ CAUTION In the interior part of this inner panel there is a very delicate thermal insulation MICROTHERM panel. It has to be handled with extreme care. AVOID TOUCHING IT.

8. - Do not disconnect the electrical heating elements. Remove the packing cardboard and the metallic part. Lift and tilt the elements outwards being careful not to damage the insulation on the bottom of the heater and place carefully the storage bricks. Arrange two levels of bricks with the flat side facing the back of the heater.

9. - Place the heating elements back into their original position. Place the second row of storage bricks with the flat side facing out and always on the heating elements supporting tabs.

Next replace the metallic plate in the top of the storage core, between the bricks and the Microthermal insulation panel with the flat side facing up. It must be placed in the right position for the fan to work correctly.

10. - Place the second row of storage bricks with the flat side facing out.
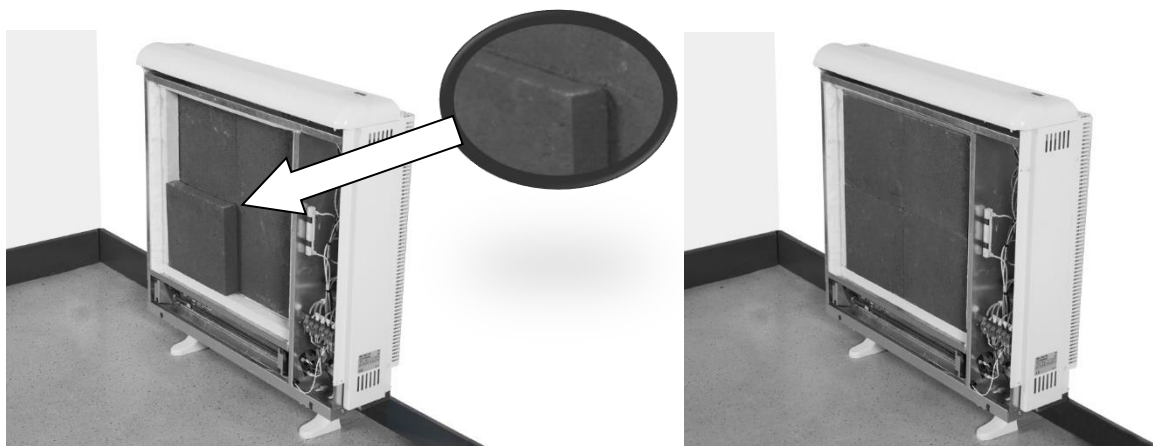
11. - Replace the inner front panel. If the bricks have been fitted correctly you will have no difficulty in replacing the panel. Make sure the bottom edge of the inner panel is inside the front lip of the heater. Please see below:

RIGHT POSITION

WRONG POSITION

12. - Replace the front panel with screws. When replacing the exterior front panel, align the 2 plastic upper pegs on the heater with the holes in the exterior panel. Push the top up into place and push the bottom and fix the panel with the removed screws.

13. - Replace the front outlet grill with the screws.

RELOCATION

⚠ WARNING: Relocation to another location must be carried out by an experienced technician.

If during reinstallation the thermal insulation shows any sign of damage, it must be removed and replaced by an identical part.

MANUALLY RESET TEMPERATURE LIMITER

This heater employs a manually reset temperature limiter (see CUT OUT in the connection diagram).

This safety device operates when high temperatures are reached at the top of the heater. It requires re-setting manually:
Let the heater cool. The cause of overheating should be investigated.

⚡ WARNING: Re-setting manually must be carried out only by an experienced technician.

Turn off the heater at the circuit breaker.

Take off the front panel by removing the two screws located at the bottom. Find the limiter CUT OUT in the connection diagram and push the small pin until a click is heard.

3. - OPERATING INSTRUCTIONS

⚠️ CAUTION: DO NOT USE THIS HEATER TO DRY CLOTHES. Do not cover this heater at any time.

3.1. CONNECTION / DISCONNECTION

Power switch.All models are equipped with a switch on the back side panel. It is used to connect and disconnect HHR.
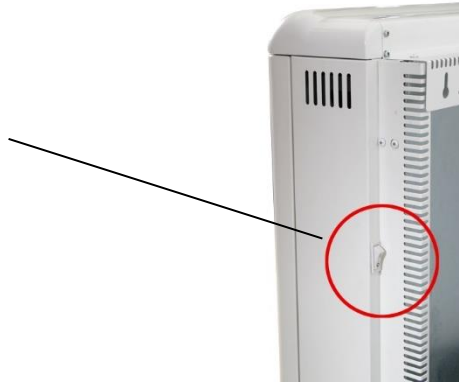
3.2. KEYBOARD:

"Sun" key:

Press the key to set up the value of Comfort Temperature.

"Moon" key:

Press the key to set up the value of Eco Temperature.
Press the key to confirm actions in several menus.
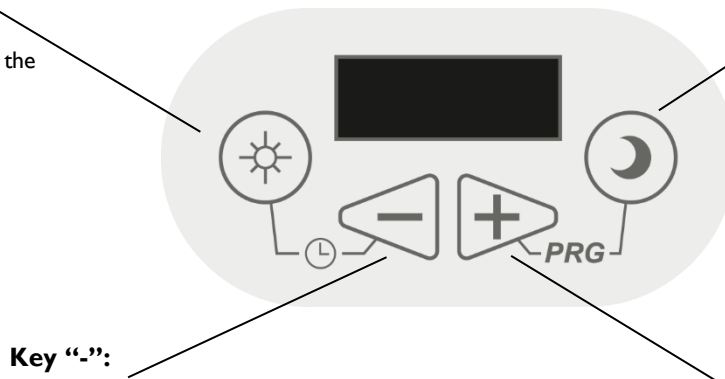
Key "-":

Press the key to decrease different values.

Key "+":

Press the key to increase different values.

Press "-" and "**Sun**" keys simultaneosly to view the current time settings.
Hold "-" and "**Sun**" keys pressed simultaneosly for several seconds to set up the system time settings.
Press "+" and "**Moon**" keys to set up the weekly programming.

3.3. KEYBOARD LOCK:
In any operation mode, it is possible to lock the keyboard holding the keys ⊖ and ⊕ simultaneously for 3 seconds.

When the keyboard is locked, if any button is pressed, display will show [- -] and the appliance will not respond.

To unlock the keyboard, hold the keys ⊖⊕ simultaneously again for 3 seconds.

3.4. SYSTEM TIME SETTING
It is necessary to set the system time for the appliance to follow correct programming and to adjust it correctly to the off peak time periods. Off peak periods have to fit with the ones established in GENERAL SETTINGS part as P01, P02, P03, and P04 (please go to "General Settings").

To set the system time, hold the key 🕑 for 3 seconds ("**Sun**" & "-" keys). Blinking day will be displayed. The Day value is changed with the ⊖ and ⊕ keys.

Then press the key 🕑 to save and proceed to change the hour value. Blinking hour will be displayed. Use ⊖ and ⊕ keys to set the hour value.

Press the key 🕑 to save and proceed to change the minute value. Save the time settings pressing 🕑 key.

ℹ️ **HHR does not change automatically from summer time to winter time or vice versa. Depending on the tariff, it may be necessary to change the clock settings to fit these two timings.**

3.5. OPERATION MODE:

The HHR operates in weekly programming mode. The temperature level (ECO, Frost protection and Comfort) can be set for each period of time (30' minutes) in the different days in the week.

Storage heater resistances will operate during off peak rate in order to charge the heater according to the demand of the room. A fan is used to discharge the heating core if necessary to reach the current set point temperature. A balance resistance can operate promptly during on peak periods providing additional heating to the room if necessary. The maximum working period of the balance resistance can be adjusted and cancelled by modifying P06 parameter. (please go to "General Settings").

WEEKLY PROGRAMMING AND TEMPERATURE LEVEL

In HHR, the set point temperature varies according to the weekly schedule established by the user. The temperature level (Frost protection, ECO and Comfort) for each time interval (30 minutes) can be selected to adjust the temperature in the room to the habits and needs of the different users.

Temperature Level

Three different temperature level can be set for each time interval. The value of the temperature level can be modified by the user.

- ☀ **COMFORT**: It is recommended for the periods of time when the user is at home and the maximum comfort is required. Default

- ☾ **ECONOMIC**: It is recommended for nights and small away periods of time. Default value 18°C.

- ❄ **FROST PROTECTION**: It is recommended for long away periods of time. Default value 3°C. The value of frost protection temperature can´t be modified.

To modify the set point temperature of Comfort and Economic temperature level, press the appropriate ☾ or ☀ key, Words "Sun" or "Moon" will appear for one second and then, the temperature value will be displayed blinking. Adjust the value for the temperature level using ⊖ and ⊕ key and confirm and save it by pressing the appropriate ☾ or ☀ key.

If any key is pressed in 10 seconds, the display returns to main screen and changes are not saved.

Weekly programming

To modify the program, press the **PRG** key ("**+**" & "**Moon**"). The text "**Prog**" is displayed for 1 second and then, the Day 1 is displayed blinking. Select the day to modify using the ⊖ and ⊕ keys.

Use the **PRG** key to enter the program of the displayed day. The first-time interval is displayed alternating with the temperature level. To modify the temperature level for the displayed interval:

- Press ☾ to set **Economic temperature** level for the current time interval.

- Press ☀ to set **Comfort temperature** level for the current time interval.

- Hold ☾ for 3 seconds to set **Frost Protection temperature** level for the current time interval.

Use ⊖ and ⊕ keys to navigate among the different time interval in the day. By pressing ⊕ key when the last time interval is displayed (23:30), the day of the week is displayed, and the others day can be modified.

It is possible to copy the program of a day in the next one. Hold the ⊕ key when the day to copy is displayed, the text **CPXY** (X: day copied, Y: new copy) will be displayed to confirm the copy.

Press the ⊕ key when the last day of the week is displayed (Day 7) to save the settings and exit to the main screen.

By default, all time intervals are in Frost Protection Temperature level.

Set point temperature level forced function

It is possible to change temporarily the temperature level for the current time interval. The modification in the temperature level will be maintained until the next changed in programming temperature level.

To change temporarily the current temperature level:

- Hold 🌙 key for 4 seconds to activate temporarily the **Economic temperature** in the current temperature level. The text "Moon" will be displayed during the forced function.

- Hold ☀ key for 4 seconds to activate temporarily the **Comfort Temperature** in the current temperature level. The text "Sun" will be displayed during the forced function.

- Hold ◁ key for 4 seconds to activate temporarily the **Frost Protection** Temperature in the current temperature level. The text "Frst" will be displayed during the forced function.

By pressing the 🌙 or ☀ key, the current forced temperature level is removed.

3.6. SMART STORAGE HEATER:

HHR optimizes the energy management and consumption and provides the heat demand requested by the user in each period of time reaching the desired comfort.

Smart charging control

HHR allows optimizing the energy management and consumption using a linear regression model based on the temperature registered in the core of HHR to determine the current % of the storage heater charge and use this information to charge only the heat necessary to supply the daily heat demand and avoid unnecessary energy consumption

ⓘ While HHR is charging (electric consumption), a small red dot blinking will appear at the bottom right part of the display.

ⓘ HHR will not charge in Frost Protection time intervals.

Protection for excess of temperature in the room

In order to achieve maximum savings and avoid unnecessary energy consumption, if, during the charging period, the temperature in the room exceeds the temperature set up in HHR for that room, then the charging will be interrupted until the temperature in the room decreases.

Charge correction

The % of the storage heater charge is corrected automatically by HHR software. If working hours of balance resistance is higher than a certain value, storage heater charge will be increased by a certain %. On the other hand, if balance resistance working hours does not exceed this value, storage heater charge level is reduced by the same %.

This behaviour adapts the consumption to the real thermal needs, allowing the maximum level of energy savings at the required comfort. The set-up temperature is independent of the Storage Heater level of charge. Initial setting for charge is 80%. This value can be modified by entering "General Settings" part and modify the initial % of storage charge according to St setting.

Smart discharge

If the energy discharged with natural convection is not enough to satisfy the heat demand of the room where HHR is installed, a fan incorporated in the HHR body will be connected to discharge the stored energy in the heater core accelerating the transfer of energy to the room and reaching the set-up temperature for the room.

A balance resistance can operate promptly during on peak periods providing additional heating to the room if necessary when the core heat is not enough to supply the heat demand for the room. The maximum working period of the balance resistance can be adjusted and cancelled by modifying P06 parameter. (please go to "General Settings").

ⓘ A fixed small red dot at the bottom right part of the display will show that the balance resistance is working at that moment.

Storage Heater and Balance heater will never work at the same time.

Open Window Detection

With open window detection activated, the fan assisted discharge and the balance resistance working will be disconnected automatically when a sharp decrease in temperature in the room is detected avoiding energy wastage. After this period of time, the storage heater returns to the prior operation mode.

3.7. CURRENT STATUS

In the normal operation of the device, it will be displayed:

- The value of sun set point temperature if the device is operating in sun temperature level in the current time interval.
- The value of moon set point temperature if the device is operating in moon temperature level in the current time interval.
- The hour (hh:mm) if the device is operating in frost protection temperature level in the current time interval.

By clicking key, the current time settings are shown in the display. (Day in firs time, hour and minute after).

By clicking or key, the current temperature level is displayed. ("Sun", "Moon", "Frst").

Useful Information

Pressing simultaneously keys and will display current temperatures taken from the sensor located in the device and another useful data.

By pressing and keys, you can navigate among the different information.

- The first data shown in the display is the room temperature taken from the sensor at the bottom of the device. There can be a temperature difference between this sensor and a normal thermometer set up in a wall room. This is because temperature is different at different heights in the room. The one at the floor is normally lower. User can adjust the sensor so that different thermometers show the same temperature. For this you can go to "General Settings" part and modify the sensor reading according to P5 setting.
- By pressing "+" key, the core temperature is shown preceded by the letter "C". e.g. "C80".
- By pressing "+" key, the air temperature is shown precede by the letter "A". e.g. "A50".
- By pressing "+" key, the last % of storage heat is shown preceded by "St". (Only "S" when 100%). e.g. "St80".
- By pressing "+" key, the time that the balance heater has worked in the last on peak rate is shown.

3.8. GENERAL SETTINGS:

HHR general operation settings can be modified. By pressing the key at the same time as we turn on the heater with the power switch, located at the right-side panel, we gain access to the general settings menu.

Sun	Temperature value for Sun Temperature level.
Moon	Temperature value for Moon Temperature level.
St	Initial % of storage charge.
P01	Starting time of reduced (off peak) rate electric period.
P02	Ending time of reduced rate electric period.
P03	Starting time of the second reduced rate electric period (if not available set up 00.00).
P04	Ending time of the second reduced rate period (if not available set up 00.00).
P05	Temperature sensor correction (values from -5°C to +5°C).
P06	Maximum working period of the balance resistance. Set up this value to "0" to cancel the balance resistance operation. With balance resistance operation cancelled, the charge correction will not operate and the same charging level will be applied every day.
P07	Excess of temperature protection during the charge. Degrees higher than the comfort set point temperature when the charge is interrupted. (Values 1-2-3-4-5).
P08	Degrees Celsius or Fahrenheit (Values: °C - °F)
Open	Open Window Function Activation. (On / Off)

Advance with the keys and , Push the key to enter in a parameter. Use same keys to modify it.

To save the new values it is necessary to pass through all of them to the last one (P08).

3.9. DEFAULT SETTINGS:

By pushing the clock key ⊕ at the same time as we turn on the heater with the power switch, located at the right-side panel, software resets to the default settings. Four horizontal blinking segments will appear in the screen to confirm it. The default programming, all time intervals in frost protection temperature level are set.

Default Values

Sun: Comfort temperature ☀	21°C
Moon: Economic temperature ☾	18°C
St: Initial % of storage charge	80%
P01: Starting time off peak period 1	00:00
P02: Ending time off peak period 1	07:00
P03: Starting time off peak period 2	00:00
P04: Ending time off peak period 2	00:00
P05: Ambient sensor Offset	0°C
P06: Max. Balance resistance – working period	5 hours
P07: Overtemperature protection	2°C
P08: Temperature Unit	°C
Open: Open Window Detection Function	Off
Default Programming	Frost Protection 24h*7
Frost protection temperature ❄	3°C (Fixed value)

ℹ️ Incorrect time settings, erroneous programming of the reduced rate time and too high temperature settings may result in a high cost of your electricity bill.

4.- TROUBLESHOOTING

HHR does not heat	Please check it is connected and switched on. Make sure the device is not covered or the lower air inlets are not obstructed. The LR safety limit may be activated; in this case, it is necessary to rearm it manually. Please contact technician.
HHR does not reach set up temperature	Make sure that adequate temperature is selected. Make sure the heater is sized correctly for heat loss.
ERR 1 in display	Ambient temperature sensor trouble, please contact technician.
ERR 2 in display	Air outlet temperature sensor trouble, please contact technician.
ERR 3 in display	Core temperature sensor trouble, please contact technician.
Keyboard does not respond	If display shows [- -] when pressing a key, the display is blocked. Press the "+" and "-" key at the same time for three seconds to unblock it.

5.- CLEANING MAINTENANCE INSTRUCTIONS

Before cleaning, make sure the power has been turned off at the circuit breaker panel and that the heating element of the heater is cool.

Occasionally, clean dust with a dry, soft cloth. Do not use any solvent or abrasive product for cleaning.

When the heating season is finished, please disconnect the device by turning off the power switch located at the right back of the unit or at the circuit breaker.

Any other servicing should be performed by an authorized technician.

ℹ️ HHR has been manufactured under a fully assured quality system and using environmentally friendly processes. Once its useful life is finished please take the device to a recycling depot so that its components can be recycled in an appropriate way.

6.- MAIN COMPONENTS LIST

|			
Storage Heating Element	Ref. 10190410	Main PCB	Ref. 15192125
275W Balancing Element (EcoHHR20)	Ref. 15192000	Keyboard PCB	Ref. 15190060
410W Balancing Element (EcoHHR30)	Ref. 15192002	Core Sensor	Ref. 15192140
550W Balancing Element (EcoHHR40)	Ref. 15192004	Air Sensor	Ref. 15192145
85°C Left Limiter	Ref. 30100040	Room Sensor	Ref. 60100580
140°C Right Limiter	Ref. 15190720	Fan	Ref. 20191056
140°C Storage Limiter	Ref. 15190720	900 Ω Fan Resistor (EcoHHR40)	Ref. 15192164
160°C Cut Out Manually Limiter	Ref. 15190730	1050 Ω Fan Resistor (EcoHHR30)	Ref. 15192162
Switch	Ref. 46100530	1200 Ω Fan Resistor (EcoHHR20)	Ref. 15192160

7.- CONNECTION DIAGRAMS

ECOHHR20

ECOHHR30
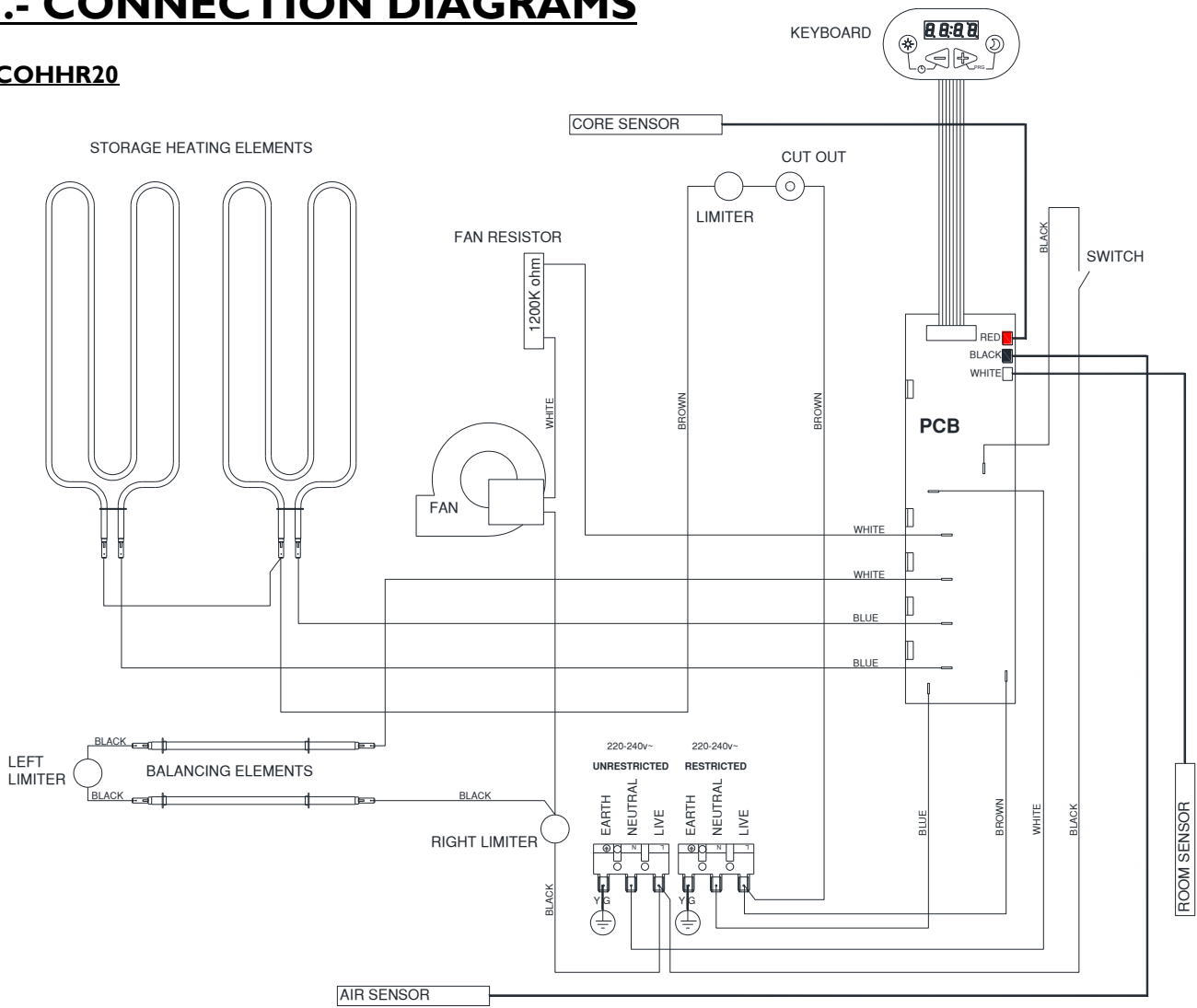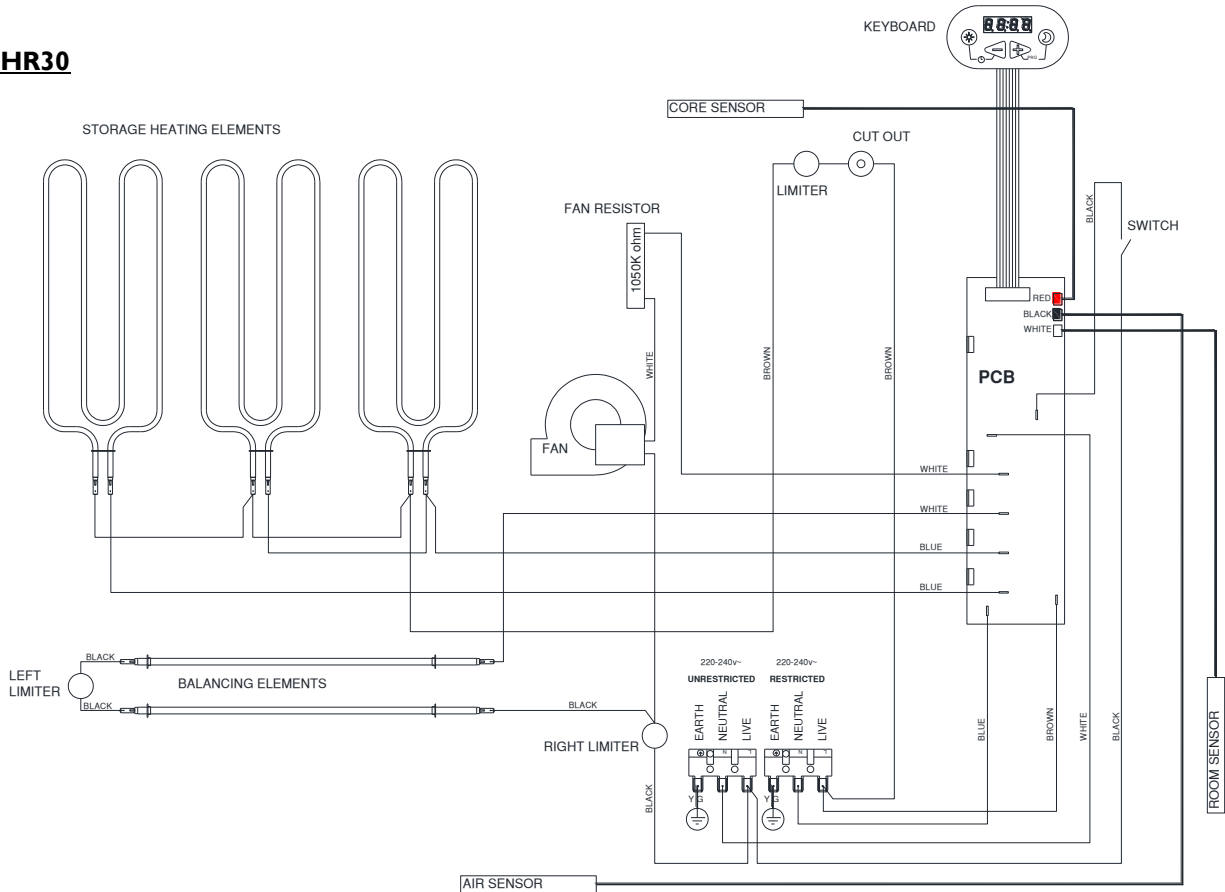
ECOHHR40
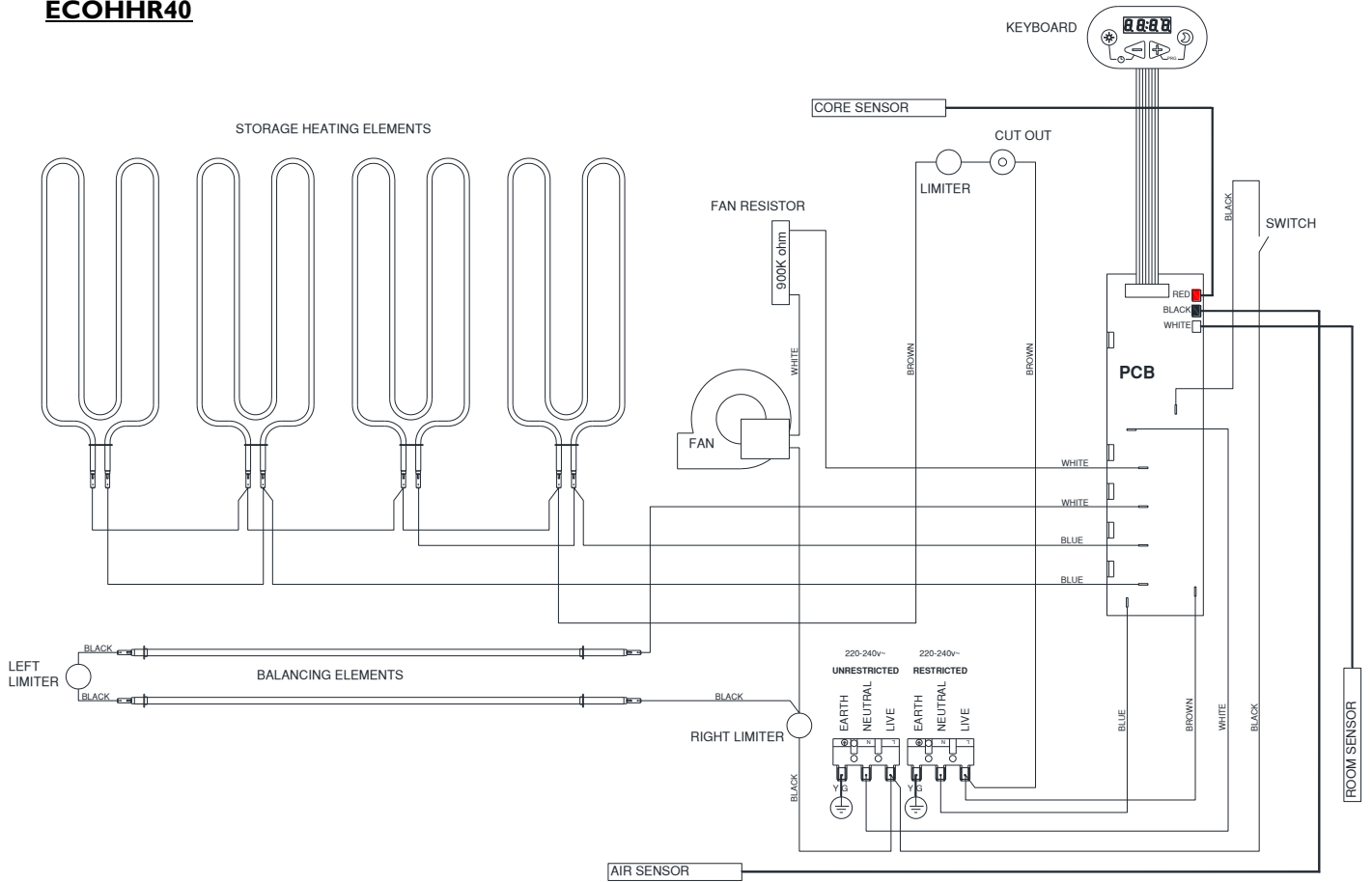
8.- TECHNICAL FEATURES

Model	ECOHHR20	ECOHHR30	ECOHHR40
CONNECTION	240V ~	240V ~	240V ~
BALANCING ELEMENT OUTPUT*	550W	820W	1100W
STORAGE OUTPUT	1742W	2613W	3484W
CHARGE PERIOD	7h	7h	7h
CHARGING	12,2 kWh	18,3 kWh	24,4 kWh
INSULATION	Class I	Class I	Class I
LENGTH	72 cm	95 cm	117 cm
HEIGHT	76 cm	76 cm	76 cm
WIDTH	19,5 cm	19,5 cm	19,5 cm
WEIGHT	97 kg	140 kg	183 kg
NUM. OF BRICKS 6kg	12	18	24

Storage heater elements and balancing element will never operate at the same time.

WARNING: In order to avoid overheating do not cover the heater.

The symbol on the product or in its packaging indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product. These instructions are only valid in the EU member states.

AENOR
ER
Empresa
Registrada
ER-0706/1999

CERTIFIED
IQNet
MANAGEMENET SYSTEM
ISO 9001

AENOR
Gestión
Ambiental
GA-2002/0284

CERTIFIED
IQNet
MANAGEMENET SYSTEM
ISO 14001

As part of the policy of continuous product improvement the manufacturer reserves the right to alter specifications without notice.

15192515 R1