

Floor-standing high efficiency gas boiler

CALORA TOWER GAS 15S EX

CALORA TOWER GAS 25S EX

CALORA TOWER GAS 35S EX



User Guide

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1 Safety instructions

1.1 General safety instructions



DANGER

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 use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.



CAUTION

- ▶ The use of the boiler and system by you as the end-user must be limited to the operations described in this User Manual. All other actions may only be undertaken by a qualified fitter/engineer.
- ▶ Only qualified persons are authorised to assemble, install and maintain the installation.



DANGER

If you smell gas:

1. Do not use a naked flame, do not smoke, do not operate electrical contacts or switches (doorbell, light, motor, lift, etc..).
2. Shut off the gas supply.
3. Open the windows.
4. Evacuate the premises.
5. Call your fitter.



DANGER

If you smell flue gases:

1. Switch the appliance off.
2. Open the windows.
3. Evacuate the premises.
4. Call your fitter.



DANGER

The installation and maintenance of the boiler must be undertaken by a qualified fitter/engineer in accordance with the information in the supplied Installation and Service Manual, doing otherwise may result in dangerous situations and/or bodily injury.



WARNING

Depending on the settings of the appliance:

- ▶ The temperature of the flue gas conduits may exceed 60°C.
- ▶ The temperature of the radiators may reach 85°C.
- ▶ The temperature of the domestic hot water may reach 65°C.



CAUTION

Do not neglect to service the appliance:

- ▶ For completely safe and optimum operation, you must have your boiler regularly serviced by an approved installer.

1.2 Recommendations



WARNING

Only qualified professionals are authorised to work on the appliance and the installation.




DANGER

For safety reasons, we recommended fitting smoke and CO alarms at suitable places in your home.

- ▶ Regularly check the water pressure in the installation (minimum pressure 0.8 bar, recommended pressure between 0.8 and 1.5 bar).
- ▶ Keep the appliance accessible at all times.
- ▶ Never remove or cover labels and rating plates affixed to the appliance. Labels and rating plates must be legible throughout the entire lifetime of the appliance.
- ▶ The appliance should be on Summer or Antrifreeze mode rather than switched off to guarantee the following functions:
 - Anti blocking of pumps
 - Antifreeze protection

1.3 Liabilities

1.3.1. Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various applicable European Directives. They are therefore delivered with  marking and all relevant documentation.

In the interest of customers, we are continuously endeavouring to make improvements in product quality. All the specifications stated in this document are therefore subject to change without notice.

Our liability as the manufacturer may not be invoked in the following cases:

- ▶ Failure to abide by the instructions on using the appliance.
- ▶ Faulty or insufficient maintenance of the appliance.
- ▶ Failure to abide by the instructions on installing the appliance.

1.3.2. Installer's liability

The installer is responsible for the installation and commissioning of the appliance. The installer must respect the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Carry out installation in compliance with the prevailing legislation and standards.
- ▶ Perform the initial start up and carry out any checks necessary.
- ▶ Explain the installation to the user.
- ▶ If a maintenance is necessary, warn the user of the obligation to check the appliance and maintain it in good working order.
- ▶ Give all the instruction manuals to the user.

1.3.3. User's liability

To guarantee optimum operation of the appliance, the user must respect the following instructions:

- ▶ Read and follow the instructions given in the manuals provided with the appliance.
- ▶ Call on qualified professionals to carry out installation and initial start up.
- ▶ Get your installer to explain your installation to you.
- ▶ Ensure the Appliance is serviced in accordance with the manufacturer's instructions by a suitable qualified person.
- ▶ Keep the instruction manuals in good condition close to the appliance.

2 About this manual

2.1 Symbols used

2.1.1. Symbols used in the manual

In these instructions, various danger levels are employed to draw the user's attention to particular information. In so doing, we wish to safeguard the user's safety, highlight hazards and guarantee correct operation of the appliance.



DANGER

Risk of a dangerous situation causing serious physical injury.



WARNING

Risk of a dangerous situation causing slight physical injury.



CAUTION

Risk of material damage.



Signals important information.



Signals a referral to other instructions or other pages in the instructions.

2.1.2. Symbols used on the equipment



Protective earthing



Alternating current



Before installing and commissioning the device, read carefully the instruction manuals provided.



Dispose of the used products in an appropriate recovery and recycling structure.



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This appliance must be connected to the protective earth.



Caution: danger, live parts.
Disconnect the mains power prior to any operations.

2.2 Abbreviations

- ▶ **3CE**: Collective conduit for sealed boiler
- ▶ **DHW**: Domestic hot water
- ▶ **HRU**: Heat Recovery Unit
- ▶ **HL**: High Load - DHW tank with plate exchanger
- ▶ **SL**: Standard Load - DHW tank with coil
- ▶ **SHL**: Solar High Load - Solar DHW tank with plate exchanger

3 Technical specifications

3.1 Certifications

CE identification no	CE-0085CM0178
NOx classification	5 (EN 15502-1, EN 15502-2-1)
Type of connection (Flue gas outlet)	B ₂₃ , B _{23P} , B ₃₃ , C ₁₃ , C ₃₃ , C ₄₃ , C ₅₃ , C ₆₃ , C ₈₃ , C ₉₃

3.2 Technical specifications

Boiler type			CALORA TOWER GAS 15S EX	CALORA TOWER GAS 25S EX	CALORA TOWER GAS 35S EX
General					
Nominal output (Pn) Heating System (80/60 °C)	minimum- maximum	kW	3,0 - 14,9	5,0 - 24,8	6,3 - 34,8
Nominal output (Pn) Heating System (50/30 °C)	minimum- maximum	kW	3,4 - 15,8	5,6 - 25,5	7,0 - 35,9
Nominal output (Pn) Heating System (40/30 °C)	minimum- maximum	kW	3,4 - 16,0	5,6 - 25,9	7,0 - 36,4
Nominal input (Qn) Heating System (Hi)	minimum- maximum	kW	3,1 - 15,0	5,2 - 25,0	6,5 - 35,1
Nominal input (Qn) Heating System (Hs)	minimum- maximum	kW	3,4 - 16,7	5,8 - 27,8	7,2 - 39,0
Nominal input (Qnw) DHW System (Hi)	minimum- maximum	kW	3,1 - 15,0	5,2 - 29,3	6,5 - 35,1
Nominal input (Qnw) DHW System (Hs)	minimum- maximum	kW	3,4 - 16,7	5,8 - 32,6	7,2 - 39,0
Heating efficiency under full load (Hi) (80/60 °C)	-	%	99,3	99,2	99,1
Heating efficiency under full load (Hi) (50/30 °C)	-	%	105,3	102,0	102,2
Heating efficiency under partial load (Hi) (Return temperature 60°C)	-	%	94,9	96,1	96,3
Heating efficiency under partial load (EN 92/42) (Return temperature 30°C)	-	%	110,2	110,1	110,6
Data on the gases and combustion gases					
Gas consumption - Natural gas H (G20)	minimum- maximum	m ³ /h	0,33 - 1,59	0,55 - 3,10	0,69 - 3,71
Gas consumption - Natural gas L (G25)	minimum- maximum	m ³ /h	0,38 - 1,85	0,64 - 3,61	0,80 - 4,32
Gas consumption - Propane G31	minimum- maximum	m ³ /h	0,13 - 0,61	0,21 - 1,20	0,27 - 1,44
Mass flue gas flow rate	minimum- maximum	kg/h	5,3 - 25,2	8,9 - 49,3	11,1 - 57,3

Boiler type			CALORA TOWER GAS 15S EX	CALORA TOWER GAS 25S EX	CALORA TOWER GAS 35S EX
Flue gas temperature	minimum- maximum	°C	30 - 65	30 - 80	30 - 75
Maximum counter pressure		Pa	80	130	140
Characteristics of the heating circuit					
Water content (ex expansion vessel)		l	1,9	1,9	2,5
Water operating pressure	minimum	kPa (bar (MPa))	80 (0,8)	80 (0,8)	80 (0,8)
Water operating pressure (PMS)	maximum	kPa (bar (MPa))	300 (3,0)	300 (3,0)	300 (3,0)
Water temperature	maximum	°C	110	110	110
Operating temperature	maximum	°C	90	90	90
Electrical characteristics					
Power supply voltage		VAC	230	230	230
Power consumption - Full load	maximum	W	101	116	132
Electrical protection index			IP21	IP21	IP21
Other characteristics					
Weight (empty)		kg	56	59	59

4 Description

4.1 Operating principle

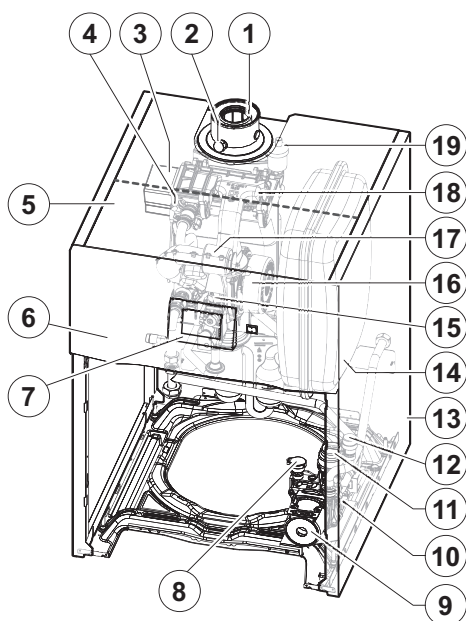
4.1.1. Gas/air setting

Air is sucked in by the fan and the gas injected into the venturi attached to the fan inlet. The fan rotation speed modulates and adapts to thermal energy requirements thanks to the temperatures measured by the various sensors. The gas and air are mixed in the venturi, which enables operation at a constant ratio. The noise of the venturi is absorbed by a silencer attached to its inlet. The gas/air mixture is carried to the burner in the top of the exchanger, guided by the pre-mix channel.

4.1.2. Combustion

The burner heats the heating water circulating in the heat exchanger. At a return temperature lower than around 55°C, the flue gases cool down to a temperature lower than the dew point, thus causing the condensation of the water vapour contained in the flue gases in the lower section of the heat exchanger. The heat released during this condensation process (the latent heat or condensing heat) is also transferred to the heating water. The cooled combustion gases are evacuated via the combustion gas outlet flue. The condensation water is evacuated via a condensate trap.

4.2 Main parts

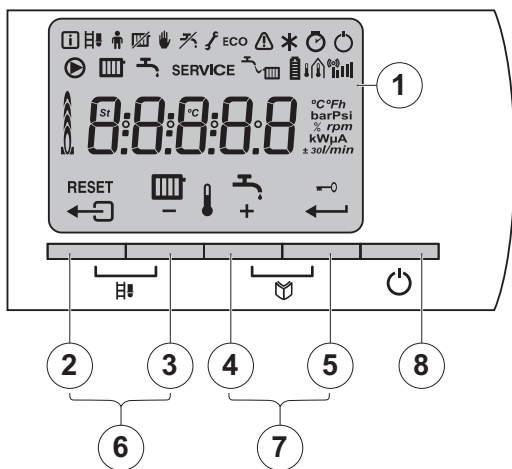


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- 1 Flue gas discharge pipe
- 2 Flue gas measuring point
- 3 Heat exchanger
- 4 Ignition/ionization electrode
- 5 Box for the control PCBs
- 6 Control panel
- 7 Command module
- 8 Water pressure sensor
- 9 Circulation pump
- 10 Hydroblock
- 11 3-way valve
- 12 Safety valve
- 13 Casing
- 14 Expansion vessel
- 15 Combined venturi and gas valve unit
- 16 Fan
- 17 Air intake silencer
- 18 Mixer pipe
- 19 Automatic air vent

4.3 Control panel























4.3.1. Functions of the keys



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- 1 Display
- 2 [Escape] or **RESET** key
- 3 Heating temperature key or [-]
- 4 DHW temperature key or [+]
- 5 [Enter] or cancel Key lock-out
- 6 [Chimney-sweeping] keys (press the 2 and 3 keys simultaneously)
- 7 [Menu] keys (press the 4 and 5 keys simultaneously)
- 8 On/off switch

4.3.2. Meaning of the symbols on the display

	Information menu: Reading the various current values.		On/Off switch: After 5 lock-outs, the boiler must be switched off/on again.
	Chimney-sweeping position: Forced full or part load for O ₂ measurement.		Circulation pump: The pump operates.
	User menu: Parameters at user level can be changed.		Central heating function: Access to central heating temperature parameter.
	Heating programme deactivated: The heating function is deactivated.		DHW function: Access to sanitary hot water temperature parameter.
	Manual mode: Boiler is set to manual operation.	SERVICE	Yellow display with the symbols:  + SERVICE +  (Maintenance message).
	DHW programme deactivated: The DHW mode is deactivated.		Water pressure: The water pressure is too low.
	Service menu: Parameters at installer level can be changed.		Battery symbol: Status of battery of wireless controller.
ECO	Energy-saving mode: Economic mode activated.		Signal strength symbol: Signal strength of the wireless controller.
	Defect: Boiler indicates a fault. This can be seen from the  code and red display.		Burner level: Boiler is running at full or low load.
	Antifreeze protection: Boiler is running in frost protection mode.		Locking the keys: Key lock-out is activated.
	Hour counter menu: Readout of the operating hours, number of successful starts and hours on mains supply.		

5 Operating the appliance

5.1 Commissioning the boiler

1. Check the water pressure in the installation shown on the control panel display.



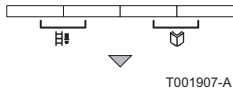
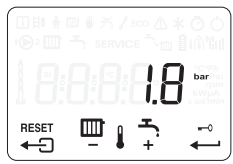
If the water pressure is lower than 0,8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1,5 and 2,0 bar).

2. Open the gas valve on the boiler.
3. Switch on the boiler.
4. The start-up cycle begins. It lasts 3 minutes and cannot be interrupted. During the start-up cycle, the display shows the following information:
 - $\boxed{F}\boxed{}:\boxed{X}\boxed{X}$: Software version
 - $\boxed{P}\boxed{}:\boxed{X}\boxed{X}$: Parameter version
 The version numbers are displayed alternately.
5. A vent cycle of a duration of around 3 minutes is carried out automatically.
6. In addition to \boxed{P} , in STAND-BY the display normally shows the water pressure and the symbols $\boxed{\text{||||}}$, $\boxed{\downarrow}$ and $\boxed{\text{R}}$.

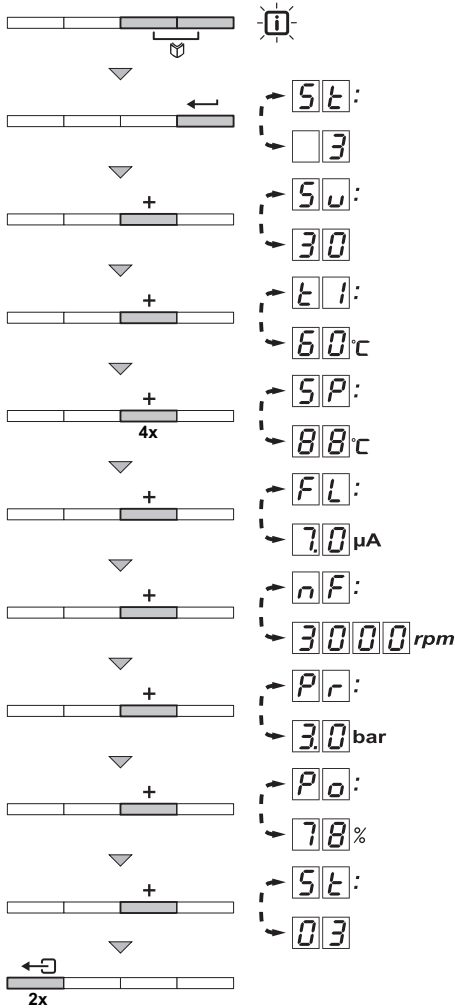
5.2 Reading out measured values

The following current values can be read off the information menu \boxed{i} :

- ▶ $\boxed{S}\boxed{t}$ = State.
- ▶ $\boxed{S}\boxed{u}$ = Sub-status.
- ▶ $\boxed{t}\boxed{1}$ = Flow temperature (°C).
- ▶ $\boxed{t}\boxed{2}$ = Return temperature (°C).
- ▶ $\boxed{t}\boxed{3}$ = Water temperature in the DHW tank (°C).
- ▶ $\boxed{t}\boxed{4}$ = Outside temperature (°C).
- ▶ $\boxed{t}\boxed{5}$ = Solar boiler temperature (°C).
- ▶ $\boxed{t}\boxed{6}$ = Solar panel temperature (°C).
- ▶ $\boxed{S}\boxed{p}$ = Internal set point (°C).
- ▶ $\boxed{F}\boxed{I}$ = Ionization current (µA).
- ▶ $\boxed{n}\boxed{F}$ = Fan speed in rpm.
- ▶ $\boxed{P}\boxed{r}$ = Water pressure (bar (MPa)).
- ▶ $\boxed{P}\boxed{o}$ = Supplied relative heat output (%).



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The current values can be read as follows:

1. Press the two keys simultaneously. The symbol flashes.
2. Confirm using key . **5E** is displayed, alternating with the current status **3** (for example).
3. Press the **[+]** key. **5U** is displayed, alternating with the current sub-status **30** (for example).
4. Press the **[+]** key. **E1** is displayed, alternating with the current flow temperature **60°C** (for example).
5. Press the **[+]** key successively to scroll down the various parameters. **E2**, **E3**, **E4**, **E5**, **E6**.
6. Press the **[+]** key. **5P** is displayed, alternating with the internal set point **88°C** (for example).
7. Press the **[+]** key. **FL** is displayed, alternating with the current ionization current **7.0 µA** (for example).
8. Press the **[+]** key. **nF** is displayed, alternating with the current fan rotation speed **3000 rpm** (for example).
9. Press the **[+]** key. **Pr** is displayed, alternating with the current water pressure **3.0 bar** (for example). If no water pressure sensor is connected, **[-.-]** appears on the display.
10. Press the **[+]** key. **Po** is displayed, alternating with the current modulation percentage **7.8 %** (for example).
11. Press the **[+]** key. The readout cycle starts again with **5E**.
12. Press the key 2 times to return to the current operating mode.

5.3 Changing the settings

5.3.1. Parameter descriptions

Parameter	Description	Adjustment range	Factory setting		
			CALORA TOWER GAS 15S EX	CALORA TOWER GAS 25S EX	CALORA TOWER GAS 35S EX
P1	Flow temperature: T _{SET}	20 to 90 °C	80	80	80
P2	Domestic hot water temperature: T _{SET}	40 to 65 °C	65	65	65
P3	Heating / DHW mode	0 = Heating deactivated / DHW deactivated 1 = Heating activated / DHW activated 2 = Heating activated / DHW deactivated 3 = Heating deactivated / DHW activated	1	1	1
P4	ECO mode	0 = Comfort 1 = Energy-saving mode 2 = Management using a programmable thermostat	2	2	2
P5	Anticipation resistance	0 = No anticipation resistance for the ON/OFF thermostat 1 = Anticipation resistance for the ON/OFF thermostat	0	0	0
P6	Display screen	0 = Simple 1 = Comprehensive 2 = Automatic switching to simple after 3 minutes 3 = Automatic switching to simple after 3 minutes; Key blocking is active	2	2	2
P7	Post-circulation of the pump	1 to 98 minutes 99 minutes = continuous	3	3	3
P8	Brightness of display lighting	0 = Dimmed 1 = Bright	1	1	1

5.3.2. Modification of the user-level parameters



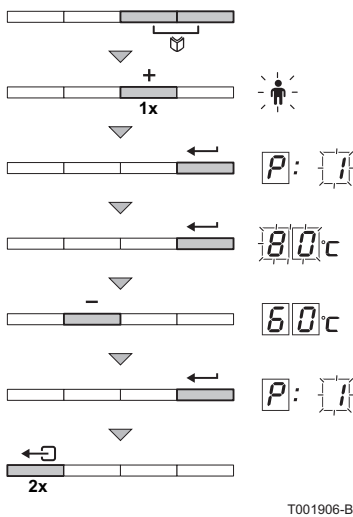
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Parameters **P1** to **P8** can be modified by the user in order to meet central heating and DHW comfort needs.



CAUTION

Modification of the factory settings may be detrimental to the functioning of the appliance.

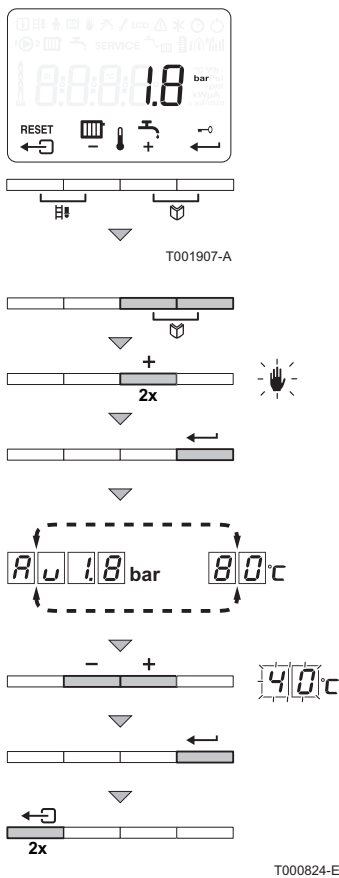


1. Press the two keys simultaneously and then key **[+]** until the symbol flashes on the menu bar.
2. Select the users menu using the key . **P: 1** is displayed with **1** flashing.
3. Press the key a second time. The value **80°C** appears and flashes (for example).
4. Change the value by pressing the **[-]** or **[+]** key. In this example using key **[-]** to **60°C**.
5. Confirm the value with the key. **P: 1** is displayed with **1** flashing.
6. Press the key 2 times to return to the current operating mode.

- i**
- ▶ The parameters **P 1** to **P 8** are changed in the same way as **P 1**. After step 2, use the **[+]** key to move to the required parameter.
 - ▶ The parameters **P 1** (the maximum heating water temperature) and **P 2** (the maximum drinking water temperature) can also be modified using the quick selection menu.

5.3.3. Setting the manual mode

In some cases it may be necessary to switch the boiler to manual operation, For example, if the controller has not yet been connected. The boiler can be switched to automatic or manual operation under the symbol . To do this, proceed as follows:

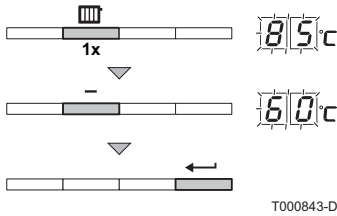


1. Press the two keys simultaneously and then key **[+]** until the symbol flashes on the menu bar.
2. Press the key:
or
 The text **A 1.8 bar** with the current water pressure (only if an outside sensor is connected). The flow temperature is determined by the internal heating curve.
or
 The value of the minimum flow temperature.
3. Press the **[-]** or **[+]** key to increase this value temporarily in manual operation.
4. Confirm the value with the key. The boiler is now set to manual operation.
5. Press the key 2 times to return to the current operating mode.

5.3.4. Changing the heating temperature

i If using an outside temperature sensor, the heating flow temperature is adjusted automatically.

In summer, it is possible to reduce the heating flow temperature whilst maintaining comfort. To do this, proceed as follows:



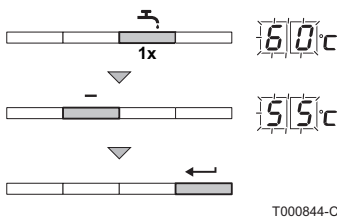
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1. Press the **1x** key 1 times.
2. The symbol **1x** and the current temperature are displayed (the temperature flashes, e.g. **80°C**).
3. Change the value by pressing the **[-]** or **[+]** key. In this example using key **[-]** to **60°C**.
4. To confirm, press the **←** key.

i It also possible to modify this setting using the parameter **P1**.

5.3.5. Changing the domestic hot water temperature

It may be that a lower domestic hot water temperature will be sufficient for your needs. Reduce this temperature and save energy. To do this, proceed as follows:



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1. Press the **🚰** key 1 times.
2. The symbol **🚰** and the current temperature are displayed (the temperature flashes, e.g. **60°C**).
3. Change the value by pressing the **[-]** or **[+]** key. In this example using key **[-]** to **55°C**.
4. To confirm, press the **←** key.

5.3.6. Modifying the domestic hot water set point temperature

To modify the set point of the solar tank (if connected), proceed as follows

1. Press the **🚰** key for 3 seconds.
2. Symbols **🚰** and **50** and the current temperature are displayed (for example, **50** and the temperature 60°C flash).
3. Change the value by pressing the **[-]** or **[+]** key. In this example using key **[-]** to **55°C**.
4. To confirm, press the **←** key.



5.4 Installation shutdown



CAUTION

Do not switch off the boiler.

If the central heating system is not used for a long period, we recommend proceeding as follows:

- ▶ Press key  until **OFF** is displayed.
- ▶ Press key  until **OFF** is displayed.

5.5 Antifreeze protection

When the heating water temperature in the boiler is too low, the integrated boiler protection system starts up. This protection functions as follows:

- ▶ If the water temperature is lower than 7°C, the heating pump starts up.
- ▶ If the water temperature is lower than 4°C, the boiler starts up.
- ▶ If the water temperature is higher than 10°C, the boiler shuts down and the circulation pump continues to run for a short time.
- ▶ If the water temperature in the storage tank is less than 4°C, it is reheated to its set point.

6 Checking and maintenance

6.1 General instructions



CAUTION

- ▶ Maintenance operations must be done by a qualified engineer.
- ▶ We recommend taking out a maintenance contract.
- ▶ Only original spare parts must be used.

6.2 Periodic checks

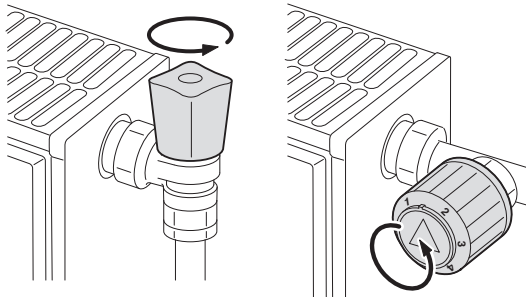


If the water pressure is lower than 0,8 bar, more water should be added. If necessary, top up the water level in the heating system (recommended hydraulic pressure between 1,5 and 2,0 bar).

- ▶ Carry out a visual check for the presence of any water leaks.



T001507-B



T000181-B

- ▶ Open and close the radiator valves several times a year (this prevents the valves from seizing up).
- ▶ Clean the outside of the boiler using a damp cloth and a light detergent.



CAUTION


Only a qualified professional is authorised to clean the inside of the boiler.

7 Troubleshooting

7.1 Error codes

The boiler is fitted with an electronic regulation and control unit. The heart of the control system is a microprocessor, the **Comfort Master®**, which controls the boiler and also protects the boiler. If a fault is detected anywhere in the boiler, the boiler locks out and the display will show the fault code as follows:

In a red flashing display:


- ▶ The symbol 
- ▶ The symbol **RESET**
- ▶ The fault code (for example **E:001**)

The meaning of the error codes is given in the error table. To do this, proceed as follows:

- ▶ Note the error code displayed.

i The error code is important for rapid and correct tracking of the type of problem and for any technical assistance from **Remeha**.

- ▶ Press the **RESET** key for 2 seconds. If the error code continues to display, search for the cause in the error table and apply the solution.

i If the display does not show **RESET** but rather , the boiler must be switched off and then switched on again after 10 seconds before the fault can be reset.

Code	Cause of the fault	Description	Checking / solution
E:000	SU/PCU	PSU PCB not connected	Bad connection PSU PCB faulty ▶ Contact the professional who takes care of maintenance of the appliance
E:001	PSU	The safety parameters are incorrect	Bad connection PSU PCB faulty ▶ Contact the professional who takes care of maintenance of the appliance
E:002	SU/PCU	The boiler flow sensor has short-circuited	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
E:003	SU/PCU	The boiler flow sensor is on an open circuit	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance


Code	Cause of the fault	Description	Checking / solution
E:04	SU/PCU	Boiler temp too low	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:05	SU/PCU	Boiler temperature too high	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:06	SU/PCU	The return temperature sensor has short-circuited	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
E:07	SU/PCU	The return temperature sensor is on an open circuit	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
E:08	SU/PCU	Return temperature too low	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:09	SU/PCU	Return temperature too high	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:10	SU/PCU	Difference between the flow and return temperatures insufficient	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure

Code	Cause of the fault	Description	Checking / solution
E:111	SU/PCU	Difference between the flow and return temperatures too great	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:112	SU/PCU	Maximum boiler temperature exceeded (STB thermostat maximum)	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			No water circulation ▶ Vent the air in the heating system ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
E:114	SU	5 burner start-up failures	No ignition ▶ Contact the professional who takes care of maintenance of the appliance
			Ignition arc, but no flame formation ▶ Check that the gas valve is fully opened ▶ Contact the professional who takes care of maintenance of the appliance
			Presence of the flame but insufficient ionization (<3 µA) ▶ Check that the gas valve is fully opened ▶ Contact the professional who takes care of maintenance of the appliance
E:116	SU	Detection of a parasite flame	Ionization current present even though there is no flame Ignition transformer defective Gas valve defect The burner remains very hot: O ₂ too high ▶ Contact the professional who takes care of maintenance of the appliance
E:117	SU	Problem on the gas valve	Bad connection SU PCB faulty ▶ Contact the professional who takes care of maintenance of the appliance
E:314	PCU	The fan is not running at the right speed	Bad connection Fan defective ▶ Contact the professional who takes care of maintenance of the appliance
E:315	SU/PCU	Flow and return reversed	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
			Water circulation direction reversed ▶ Check the circulation (direction, pump, valves)
E:316	SU/PCU	The flame went out more than 5 times in 24 hours while the burner was operating	No ionization current ▶ Check that the gas valve is fully opened ▶ Contact the professional who takes care of maintenance of the appliance


Code	Cause of the fault	Description	Checking / solution
E:37	SU/PCU	Communication failure with the SU PCB	Bad connection ▶ Contact the professional who takes care of maintenance of the appliance
E:38	PCU	Communication failure between the PCU and SCU PCBs	Bad connection SCU PCB not connected or faulty ▶ Contact the professional who takes care of maintenance of the appliance
E:39	PCU	The BL inlet is open	Bad connection External cause Parameter incorrectly set ▶ Contact the professional who takes care of maintenance of the appliance
E:40	PCU	HRU/URC unit test error	Bad connection External cause Parameter incorrectly set ▶ Contact the professional who takes care of maintenance of the appliance

7.2 Shutdowns and lock-outs







7.2.1. Lock out


If the blocking conditions still exist after several start up attempts, the boiler will switch into locking mode (fault). The boiler can only start operating again once the causes of the lock-out have been rectified and after pressing the  key.

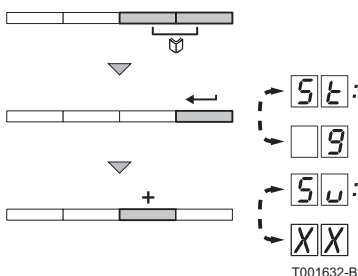
7.2.2. Blocking

A (temporary) blocking mode is a boiler operating function caused by an unusual situation. In this case, the display gives a code of blocking (code ). The boiler control will try to re-start several times. The boiler will start up again after the blocking conditions have been eliminated.

To display the current blocking code, proceed as follows:

1. Press the two  keys simultaneously.
2. Confirm by pressing key .  is displayed, alternating with the shutdown code .
3. Press the **[+]** key.  is displayed, alternating with the shutdown code .

 The boiler starts up again automatically when the reason for the blocking has been removed.



Code	Description	Checking / solution
S.w.:00	The PSU PCB is incorrectly configured	Parameter error on the PSU PCB ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:01	Maximum flow temperature exceeded	The water flow in the installation is insufficient ▶ Check the circulation (direction, pump, valves)
S.w.:02	The increase in flow temperature has exceeded its maximum limit	The water flow in the installation is insufficient ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
		Sensor error ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:07	Maximum difference between the flow and return temperature exceeded	The water flow in the installation is insufficient ▶ Check the circulation (direction, pump, valves) ▶ Check the water pressure
		Sensor error ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:08	The RL inlet on the PCU PCB terminal block is open	Parameter error ▶ Contact the professional who takes care of maintenance of the appliance
		Bad connection ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:09	Live/neutral inversion	Parameter error ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:10 S.w.:11	The BL inlet on the PCU PCB terminal block is open	The contact connected to the BL inlet is open ▶ Contact the professional who takes care of maintenance of the appliance
		Parameter error ▶ Contact the professional who takes care of maintenance of the appliance
		Bad connection ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:13	Communication error with the SCU PCB	Bad connection ▶ Contact the professional who takes care of maintenance of the appliance
		SCU PCB not installed in the boiler ▶ Contact the professional who takes care of maintenance of the appliance
S.w.:14	The water pressure is lower than 0,8 bar	Not enough water in the circuit ▶ Top up the installation with water
		Parameter error ▶ Contact the professional who takes care of maintenance of the appliance
		Failure water pressure switch ▶ Contact the professional who takes care of maintenance of the appliance

Code	Description	Checking / solution
S.u.:15	Gas pressure too low	Incorrect setting of the gas pressure switch on the SCU PCB <ul style="list-style-type: none"> ▶ Check that the gas valve is fully opened ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:16	The SU PCB is not recognised	Wrong SU PCB for this boiler <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:17	The parameters saved on the PCU PCB are impaired	Parameter error on the PCU PCB <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:18	The PSU PCB is not recognised	Wrong PSU PCB for this boiler <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:19	The boiler has not been configured	The PSU PCB has been changed <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:21	Communication error between the PCU and SU PCBs	Bad connection <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:22	No flame during operation	No ionization current <ul style="list-style-type: none"> ▶ Check that the gas valve is fully opened ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:25	Internal error on the SU PCB	<ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:26	The DHW tank sensor is disconnected or short circuited	<ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:27	The sensor on the plate exchanger outlet is disconnected or short circuited	<ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:28	An HL tank is detected whilst the boiler cannot control it. This message disappears after 10 seconds if the boiler can control the HL tank	<ul style="list-style-type: none"> ▶ Wait for 10 seconds to see whether the error persists ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:29	Communication error between the PCU and SCU-s191 PCBs	Bad connection <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:30	Communication error between the SCU-s191 PCBs and the solar control system	Bad connection <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:31	The TAS is in open circuit	The Titan Active System® is on an open circuit <ul style="list-style-type: none"> ▶ Contact the professional who takes care of maintenance of the appliance Remarks: Domestic hot water production is stopped but may nevertheless be restarted for 72 hours after the boiler is switched off. The tank is no longer protected. If a tank without Titan Active System® is connected to the boiler, check that the TAS simulation connector is fitted to the SCU-s191 PCB.

Code	Description	Checking / solution
S.u.:32	The TAS is short circuited	The Titan Active System® is short-circuited ▶ Contact the professional who takes care of maintenance of the appliance Remarks: Domestic hot water production is stopped but may nevertheless be restarted for 72 hours after the boiler is switched off. The tank is no longer protected. If a tank without Titan Active System® is connected to the boiler, check that the TAS simulation connector is fitted to the SCU-s191 PCB.
S.u.:33	The header sensor in the solar control system is defective	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance
S.u.:34	The sensor in the solar tank is defective	Bad connection Sensor fault ▶ Contact the professional who takes care of maintenance of the appliance

8 Energy savings

8.1 Energy-saving advice

- ▶ Keep the room in which the boiler is installed well ventilated.
- ▶ Do not block ventilation outlets.
- ▶ Do not cover the radiators. Do not hang curtains in front of the radiators.
- ▶ Install reflective panels behind the radiators to prevent heat losses.
- ▶ Insulate the pipes in rooms that are not heated (cellars and lofts).
- ▶ Close the radiators in rooms not in use.
- ▶ Do not run hot (or cold) water pointlessly.
- ▶ Install a water-saving shower head to save up to 40 % energy.
- ▶ Take showers rather than baths. A bath consumes twice as much water and energy.

8.2 Room thermostat and settings

The room thermostat is available in the following versions:

- ▶ 2-wire ON/OFF thermostat
- ▶ Modulating thermostat
- ▶ Programmable room temperature thermostat

The type of thermostat and its settings have a considerable influence on energy consumption.

A few tips:

- ▶ A modulating thermostat, possibly in combination with thermostatic valve radiators, saves energy and offers considerable comfort. This combination allows you to set the temperature on each flow. In the room in which the room thermostat is installed, do not fit thermostatic valve radiators.
- ▶ Completely closing and opening thermostatic valve radiators causes undesirable temperature fluctuations. Open and close thermostatic valves in small steps.
- ▶ Lower the thermostat to around 20°C. This reduces heating costs and energy consumption.
- ▶ Lower the room thermostat when you air the rooms.
- ▶ If you are using an ON/OFF type thermostat, reduce the water temperature value () in summer (e.g. 60°C in summer and 80°C in winter).
- ▶ When setting an hourly programmable thermostat, keep in mind the days you are absent or on vacation.

9 Warranty

9.1 General

You have just purchased one of our appliances and we thank you for the trust you have placed in our products.

Please note that your appliance will provide good service for a longer period of time if it is regularly checked and maintained.

Your installer and our customer support network are at your disposal at all times.

9.2 Warranty terms

The following provisions are not exclusive of the buyer being able benefit from the legal provisions applicable regarding hidden defects in the buyer's country.

Starting from the purchase date shown on the original installer's invoice, your appliance has a contractual guarantee against any manufacturing defect.

The length of the guarantee is mentioned in the price catalogue. The manufacturer is not liable for any improper use of the appliance or failure to maintain or install the unit correctly (the user shall take care to ensure that the system is installed by a qualified engineer).

In particular, the manufacturer shall not be held responsible for any damage, loss or injury caused by installations which do not comply with the following:

- ▶ applicable local laws and regulations,
- ▶ specific requirements relating to the installation, such as national and/or local regulations,
- ▶ the manufacturer's instructions, in particular those relating to the regular maintenance of the unit,
- ▶ the rules of the profession.

The warranty is limited to the exchange or repair of such parts as have been recognised to be faulty by our technical department and does not cover labour, travel and carriage costs.

The warranty shall not apply to the replacement or repair of parts damaged by normal wear and tear, negligence, repairs by unqualified parties, faulty or insufficient monitoring and maintenance, faulty power supply or the use of unsuitable fuel.

Sub-assemblies such as motors, pumps, electric valves etc. are guaranteed only if they have never been dismantled.

The legislation laid down by european directive 99/44/EEC, transposed by legislative decree No. 24 of 2 February 2002 published in O.J. No. 57 of 8 March 2002, continues to apply.

Appendix

Information on the ecodesign and energy labelling directives

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1 Specific information

1.1 Recommendations


Note

Only qualified persons are authorised to assemble, install and maintain the installation.

1.2 Ecodesign Directive

This product conforms to the requirements of European Directive 2009/125/EC on the ecodesign of energy-related products.

1.3 Technical data

Tab.1 Technical parameters for boiler space heaters

Product name			CALORA TOWER GAS 15S EX	CALORA TOWER GAS 25S EX	CALORA TOWER GAS 35S EX
Condensing boiler			Yes	Yes	Yes
Low-temperature boiler ⁽¹⁾			No	No	No
B1 boiler			No	No	No
Cogeneration space heater			No	No	No
Combination heater			No	No	No
Rated heat output	P_{rated}	kW	15	25	35
Useful heat output at rated heat output and high temperature regime ⁽²⁾	P_4	kW	14.9	24.8	34.8
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	P_1	kW	5.0	8.3	11.6
Seasonal space heating energy efficiency	η_s	%	94	94	94
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	89.5	89.4	89.3
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	99.3	99.2	99.6
Auxiliary electricity consumption					
Full load	el_{max}	kW	0.031	0.045	0.062
Part load	el_{min}	kW	0.021	0.019	0.021
Stand-by	P_{SB}	kW	0.004	0.004	0.004
Other characteristics					
Standby heat loss	P_{stby}	kW	0.078	0.078	0.085
Ignition burner power consumption	P_{ign}	kW	-	-	-
Annual energy consumption	Q_{HE}	GJ	46	77	107
Sound power level, indoors	L_{WA}	dB	46	51	53
Emissions of nitrogen oxides	NO _x	mg/kWh	30	34	38
(1) Low temperature means for condensing boilers 30°C, for low temperature boilers 37°C and for other heaters 50°C return temperature (at heater inlet).					
(2) High temperature regime means 60°C return temperature at heater inlet and 80°C feed temperature at heater outlet.					



See
The back cover for contact details.

1.4 Circulation pump



Note
The benchmark for the most efficient circulators is $EEL \leq 0.20$.

1.5 Disposal and Recycling

Fig.1 Recycling



Warning
Removal and disposal of the boiler must be carried out by a qualified installer in accordance with local and national regulations.

If you need to remove the boiler, proceed as follows:

1. Switch off the boiler.
2. Cut the electrical power to the boiler.
3. Close the main gas valve.
4. Close the water mains.
5. Close the gas valve on the boiler.
6. Drain the installation.
7. Remove the air vent hose above the siphon.
8. Remove the siphon.
9. Remove the air/flue gas pipes.
10. Disconnect all pipes on the underside of the boiler.
11. Dismantle the boiler.

1.6 Product fiche - Boiler space heaters

Tab.2 Product fiche for boiler space heaters

Product name		CALORA TOWER GAS 15S EX	CALORA TOWER GAS 25S EX	CALORA TOWER GAS 35S EX
Seasonal space heating energy efficiency class		A	A	A
Rated heat output (<i>Prated</i> or <i>Psup</i>)	kW	15	25	35
Seasonal space heating energy efficiency	%	94	94	94
Annual energy consumption	GJ	46	77	107
Sound power level L_{WA} indoors	dB	46	51	53



See
For specific precautions on assembly, installation and maintenance: see the chapter on Safety Instructions.

1.7 Package fiche - Boilers

Fig.2 Package fiche for boilers indicating the space heating energy efficiency of the package

Seasonal space heating energy efficiency of boiler ①
‘I’ %

Temperature control
 from fiche of temperature control

Class I = 1%, Class II = 2%, Class III = 1.5%,
 Class IV = 2%, Class V = 3%, Class VI = 4%,
 Class VII = 3.5%, Class VIII = 5%

②
 + %

Supplementary boiler
 from fiche of boiler

Seasonal space heating energy efficiency (in %)

③
 (- ‘I’) x 0.1 = ± %

Solar contribution
 from fiche of solar device

Collector size (in m²)

Tank volume (in m³)

Collector efficiency (in %)

Tank rating ⁽¹⁾
 A* = 0.95, A = 0.91,
 B = 0.86, C = 0.83,
 D - G = 0.81

(‘III’ x + ‘IV’ x) x 0.9 x (/100) x = + %

④

(1) If tank rating is above A, use 0.95

Supplementary heat pump
 from fiche of heat pump

Seasonal space heating energy efficiency (in %)

⑤
 (- ‘I’) x ‘II’ = + %

Solar contribution AND Supplementary heat pump
 select smaller value

0.5 x OR 0.5 x = - %

⑥

Seasonal space heating energy efficiency of package ⑦
 %

Seasonal space heating energy efficiency class of package

G	F	E	D	C	B	A	A*	A**	A***
<30%	≥30%	≥34%	≥36%	≥75%	≥82%	≥90%	≥98%	≥125%	≥150%

Boiler and supplementary heat pump installed with low temperature heat emitters at 35°C ?
 from fiche of heat pump

⑦
 + (50 x ‘II’) = %

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as this efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

AD-3000743-01

I The value of the seasonal space heating energy efficiency of the preferential space heater, expressed in %.

- II The factor for weighting the heat output of preferential and supplementary heaters of a package as set out in the following table.
- III The value of the mathematical expression: $294/(11 \cdot \text{Prated})$, whereby 'Prated' is related to the preferential space heater.
- IV The value of the mathematical expression $115/(11 \cdot \text{Prated})$, whereby 'Prated' is related to the preferential space heater.

Tab.3 Weighting of boilers

Psup / (Prated + Psup)⁽¹⁾⁽²⁾	II, package without hot water storage tank	II, package with hot water storage tank
0	0	0
0.1	0.3	0.37
0.2	0.55	0.70
0.3	0.75	0.85
0.4	0.85	0.94
0.5	0.95	0.98
0.6	0.98	1.00
≥ 0.7	1.00	1.00

(1) The intermediate values are calculated by linear interpolation between the two adjacent values.
 (2) Prated is related to the preferential space heater or combination heater.

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22/04/2016



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