domestic heating solutions
hometherm

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Operating manual for Rondo-NG

Dated: March 2018

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1 - Safety

Please read this operating manual carefully, and comply closely with the provided information. Keep this manual and all applicable documents safely to hand. If you pass on the heating system, please make sure to enclose all relevant documents.

1.1 Designated use

This product is a system component and is not suitable for separate operation. It consists of an electrical heating rod with permanently installed control unit and separate infra-red remote control.

The product is designed for installation in a designated, liquid-filled radiator (e.g. heated towel rail or other suitable radiator). The liquid must be non-combustible, and must be specified by the radiator manufacturer or distributor or the professional installation engineer.

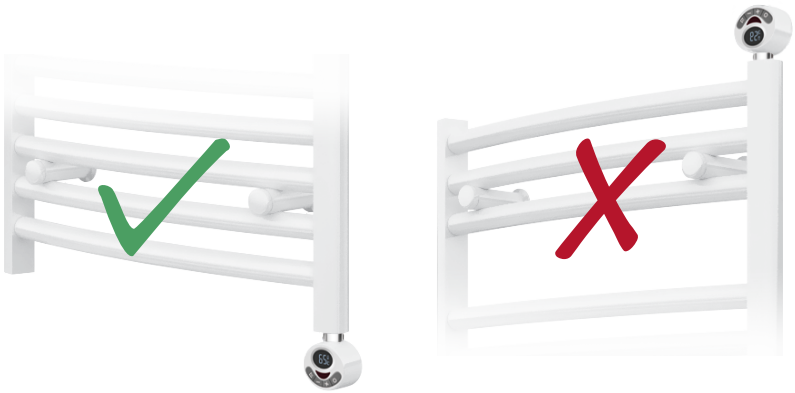
These types of radiators are suitable for increasing and maintaining room temperature and/or for drying towels). When selecting the output (W) for the product, the information from the radiator manufacturer or distributor must always be complied with. The two parts (radiator and electrical heating system) must be precisely coordinated to one another. Any other use is considered improper use. Using the product in a way other than that described above, or in a way that extends beyond that described above, is considered improper use.

Any misuse is prohibited.

When using the product, it must also be ensured that the protection class (IP) of the product complies with the protection class requirements at the radiator installation location, and also with the protection zones in bathrooms where applicable.

1.2 General safety instructions

Incorrect installation or incorrect operation may pose a risk to you and others and may bring about material damage both to the product and to other objects.
If live components are touched, there is a risk to life due to electric shock. Only work with the product when it has cooled down and has been verified as being completely de-energised.
Always use the correct tool to tighten or loosen screw connections. Never screw the heating rod into a radiator where the rotary controller is turned by hand. Use a **suitable wrench** and screw in the heating rod so that it is sitting securely in the radiator with the display side facing forwards so the display is visible. It is not necessary to forcibly screw in the heating rod all the way to the stop. The heating rod seal provides a certain degree of compensation here. The heating rod with control unit must always be screwed in at the bottom of the radiator, **never at the top**.



Never try to detach the control unit from the heating rod. The two components constitute a single unit that have been permanently attached at the factory. Detaching the two components, or even attempting to detach them, may lead to the destruction of the entire device and may invalidate any warranty claims or liability.

Always observe the national regulations, standards, guidelines and laws. Children must not play with the product or operate it once installed.

1.3 Qualification

The following work with the product must only be carried out by people who are sufficiently qualified to do so. This applies in particular for electrical work.

- **Assembly**
- **Disassembly**
- **Installation**
- **Commissioning**
- **Inspection and maintenance**
- **Repair**
- **Decommissioning**

1. **Observe all of the instructions for the product as well as the information from the radiator manufacturer or distributor.**
2. **Work in accordance with the latest state of technology.**
3. **Comply with all applicable guidelines, standards, laws and other regulations.**

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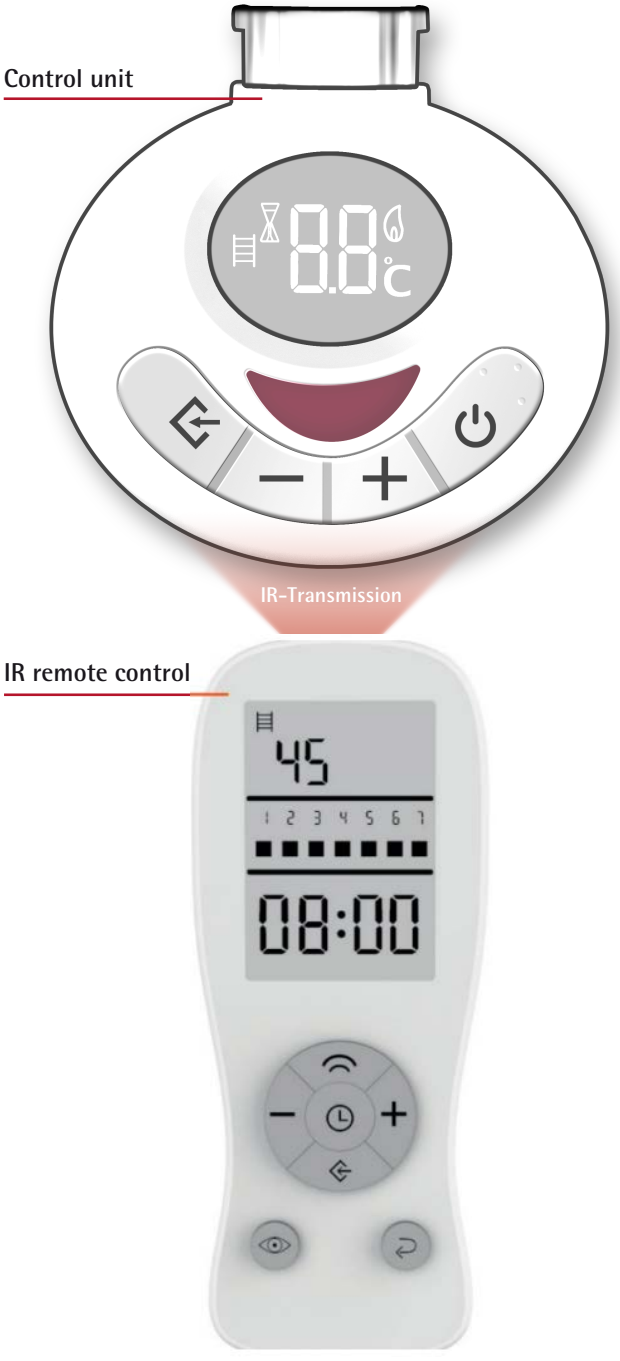
2 - Ecodesign Directive

In accordance with the EU Ecodesign Directive 2009/125/EC (specific information for the local space heater product range in Regulation 2015/1188), as of 1 January 2018, it is only permissible to put electrical local space heaters into operation if certain requirements have been met with regard to the regulation/control. The aim of this Regulation is to save energy as part of environmental protection.
In this context, a distinction is made between output, portable or fixed heaters, and application. Under the terms of the Regulation, each of these criteria has different requirements with regard to the regulation/control of the radiator. Because our product Rondo-NG is bound by these requirements as it is used to control the radiators in question, the device was designed to clearly comply with the most stringent requirements of the Directive right from the start. Our product meets all of the Regulation requirements in full.

3 - Schematic depiction

3.1 Description of the control unit

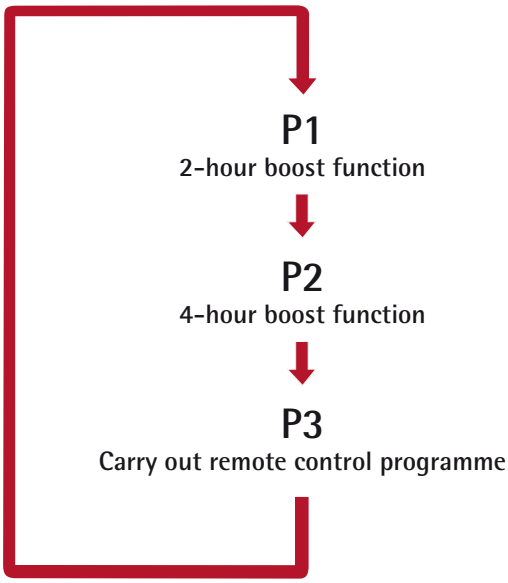
3.2 Description of the infrared operation



4 - Button functions

4.1 Control unit button functions

Symbol	Function
	"On - Standby - On" button (with acoustic signal and Braille character)
	Adjusting the target temperature
	Fixed programme functions (press keys multiple times)
	Infra-red receiver on the control unit receives the transmission of remote control programmes



4.2 Infra-red remote control button functions

Symbol	Function
	Transmission button (for sending input information to the control unit)
	Basic settings (date, time etc.)
	Operating settings (e.g. switching times)
	Reduce displayed values
	Increase displayed values
	Check programme, enter password etc.
	Confirmations, corrections etc.

5 - Starting the control unit

5.1 First steps

The heating rod with control unit must be safely installed in a filled heated towel rail or equivalent radiator by a professional. A water/glycol mix should be used as a filling agent. Never use combustible or other hazardous substances. The control unit is connected to a grounded 230 V connector (class I), either directly into a socket via a plug connector (if this is permissible in the country in question) or to a terminal box fused where necessary (in accordance with local regulations). Please also observe the protection classes for electrical devices applicable in bathroom area. All of the listed steps must only be carried out by an appropriate professional. We accept no liability or obligations for incorrect installation or commissioning.

5.2 Working with the control unit

Once the power supply for the control unit has been established as outlined above, a dot will appear at the bottom of the controller display. This indicates that the controller is being supplied with current and is ready for operation. It is now in standby mode.

Pressing the button on the controller puts it into operating mode, and the previously used temperature setting will appear on the display together with the symbol for radiator temperature measurements. If the current radiator temperature is below the displayed target temperature, a flashing flame symbol will appear. This is always an indication that the actual temperature differs from the target temperature. If the device is heating up in order to adjust the temperature, the flame will flash slowly. If the actual temperature is falling in order to reach the target temperature, the flame will flash quickly. When the selected target temperature has been reached, the flame symbol will disappear. If no flame is shown on the display, this means that the actual temperature is the same as the target temperature on the display.

The target temperature for the radiator can be adjusted in 5°C intervals using these buttons on the controller.

This button on the controller is an input button with 3 functions: P1, P2, and P3. The required level can be selected by pressing the button repeatedly. The levels are as follows:

P1 = The device operates at maximum power for 2 hours and then returns to the previous operating mode.
P2 = Same as P1, but for 4 hours. These two functions are known as "booster" functions.
Once the boost period for P1 or P2 has come to an end, the device will return to manual mode with the previously selected temperature.
P3 = The programme entered via remote control is carried out at the corresponding times.

5.3 Switching between the three P functions

Press the button on the controller. The current temperature flashes. Press the button again, and P1 will appear briefly on the display. Then 2H will appear (for 2-hour booster). This function is now running. To select the 4-hour booster function, press the button again. P1 will flash on the display. If P1 is flashing on the display, press the button again. P2 will appear, followed briefly by 4H (for the 4-hour booster). If no further selection is made, this function will start to run.

If you wish to carry out the entered remote control programme, you can now switch to P3 in the same way as before. The symbols "." and ⧖ will appear on the control unit display either if no programme has been saved or if no programme is currently being carried out. If a temperature and other symbols are shown on the display, this means that a preset programme is currently running automatically.

If the controller is in the P3 position and a saved programme is running, the +/- buttons on the control unit can be used to change the defined temperature for the programme. The change will also be shown on the controller display. This change only applies to the current cycle, and will not be permanently adopted for the programme.

If no programme has been entered in P3, it is possible to switch between the individual P positions. However, it will not be possible to simply switch between the positions if a programme is detected - even if it is not currently running. If you wish to switch from P3 to P1 or P2 in this case, you will firstly need to press the standby button ⏻ on the controller to end the current operation, and then press the button again to go to manual mode. The P1 and P2 functions can now be selected again by pressing the ⇦ button. Press P3 to go back to automatic mode. If a programme is currently active there, this will be carried out even if there is only residual cycle time remaining.

5.4 Data input from the remote control

In order to receive data sent to the controller from the remote control, the controller must always be in position **P3** (see above). Otherwise, data will not be received and will therefore not be saved, meaning that it will not be carried out.

6 - Starting up and using the remote control

Batteries (2 x AAA 1.5V) are not included.

6.1 Removing the protective film

The remote control display is protected with a film. This can be removed prior to use.

6.2 Inserting the batteries

Open the cover on the back of the remote control. To do so, put your index finger into the designated indentation, press the cover slightly downwards, and then pull it out. The cover can now be removed.

Place the two batteries into the battery chamber. Make sure that the batteries are inserted the right way round for the polarity (+/-). The correct polarity is indicated. Then close the cover.

6.3 Wall mount for remote control

The enclosed wall mount can be attached to the wall using the enclosed assembly materials and drilling template, and is used to hold the remote control when not in use. The remote control can be simply mounted onto the wall mount.

6.4 General information on using the remote control

When you put the remote control into operation for the first time, please firstly enter the basic settings before entering operating programmes or additional data. The procedure is explained in detail in the following sections.

To enter programmes or other data, you do not need to be in the vicinity of the radiator with the control unit. You can make entries in the remote control from any location.

If you wish to send entered data to the control unit on the radiator, however, you will need to be close to the control unit and you will need to hold the remote control with one of the short narrow ends pointing towards the controller. There is an infra-red transmitter for remote control on both of the short narrow ends. There must not be any objects impairing the optical connection between the remote control and the controller. Once unimpaired optical connection is guaranteed, send the data to the controller by pressing the transmission button . Transmission is confirmed on the remote control display.

In order that the transmitted data can be received and saved by the controller, the controller must be in position P3. It does not matter if data has already been saved or whether a programme is currently being carried out. Once the transmission button is pressed on the remote control and the control unit is in P3 mode, the controller adopts the new entry immediately and changes any programme currently running. See also the section entitled “Working with the control unit” in this manual.

7 - Data entry in the remote control

7.1 Basic settings (summertime/ wintertime, time, day)

Briefly press ◷ - S or W (summertime/wintertime) will flash.
+ Briefly press to select S or W, and then briefly press ◷ again to confirm the selection. You will then be taken to the time setting. The hour flashes: Use the — or + buttons to set the current time, and then press ◷ to confirm.
The minutes flash: set in the same way as the hour, and then press ◷ to confirm. The days (1-7: Monday–Sunday) are now displayed. Use the — or + buttons to select the current day, and then press ◷ to confirm.

The current settings have now been made and will be permanently shown on the display.

7.2 Operating settings (operating hours, operating temperatures, operating modes)

Briefly press ⏎ - the days 1-7 will be displayed. A cursor will flash under the 1st day of the week (Monday). If you wish to set a weekly repeating entry for this day, briefly press the + button. The cursor will flash more quickly, indicating that entries can now be made for this day. Now briefly press the ⏎ button to confirm the day for subsequent data entry. The cursor moves to the next day of the week. To select this day as well, proceed in the same way as for the first day. If you do not wish to confirm a day for data entry, you can skip it by pressing the ⏎ button again immediately after confirming the previous day. After pressing the ⏎ button for the last day of the week, the system will go to the data entry screen for the selected days. The selected days will appear on the display. "01" at the top left-hand side of the display indicates that this is the first of a maximum of 4 programmes. At the bottom part of the display, the word "Start" will appear, with a time flashing underneath, which can be adjusted to the required start time by pressing the + or – buttons. Once the time has been selected, press the ⏎ button and the word "Stop" will appear. Now enter the required end time for the programme in the same way, and press the ⏎ button again. On the top edge of the display, the symbol for the temperature of the heated towel rail is displayed on the left, and the symbol for the room temperature on the right.

Press the — or + buttons to switch between the two symbols. The symbol shown on the display represents the selected option. Confirm the selection by pressing the ⏎ button. The selected symbol is then displayed, with the currently selected room or radiator temperature (depending on the selected symbol) flashing underneath. Use the — or + buttons to select the desired temperature, and then press the ⏎ button to confirm. Available temperatures are 30-70°C (in 5°C increments) for the

radiator temperature, and 15-35°C (in 1°C increments) for the room temperature.

Once the desired temperature has been confirmed, the start time prompt will appear at the bottom edge of the display. A large "02" is shown as the caption, indicating the 2nd work sequence. A total of 4 different work sequences (01–04) can be set for each day.

If you do not wish to enter 4 work programmes for selected days press the ⇦ button for the last entered programme and then press the ⮌ button as soon as the new number for the next programme appears. This ends the programme entry, the word "good" appears on the display and the device switches to the standard display.

Please note that if you have selected multiple days for the aforementioned entries, all of these days will work with the same programmes. If you want to have different times or temperatures for one or more days, you will need to select these days separately, either individually or as a group.

Example:

If you want Monday, Tuesday and Wednesday to work with the same programmes... ...select these days and enter the data. If you want to specify a different entry for Friday... ...go to the data entry again, enter the required data and then confirm. If you want to specify different times for Saturday and Sunday... ...select these days and enter common programmes. In this example on Thursday should be no heating at all... ...select Thursday and make sure that not start/stop time is set.

7.3 Temporarily switching off certain work sequences and resetting

If certain work sequences are not going to be carried out for a certain period of time on individual days, e.g. due to absence, but the entire control system is not going to be switched off, e.g. due to frost protection, proceed as follows:

Press the ⇦ button on the remote control. Select the day to be deleted by pressing the ⇦ button again. Then press the + button to activate the selected day.
Then press the ⇦ button until you get to the end of the week. Programme "01" appears. Press the ◷ button to delete the entire day. The word "good" appears on the remote control display, and the entries for this day are deleted.

The entries for multiple days can also be deleted in this way by proceeding as follows when selecting the days:

Press the ⇦ button repeatedly until you reach the day you wish to delete. Activate the day by pressing the + button (flashes quickly). Press the ⇦ button again to move to the next day to be deleted, and activate by pressing the + button. Proceed in the same way for any additional days you wish to delete. Then press the ⇦ button until you get to the end of the week. Programme "01" appears on the display. Press the ◷ button; all selected days are deleted.

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Restoring deleted data

If you are planning on reusing the deleted data at a later date without having to make a lot of new entries, then proceed as follows:
Proceed in the same way as entering new programmes for the days of the week. When a day for which the data has previously been deleted is selected, the previously deleted data will appear as a suggestion for the new entry. To adopt this data, simply press the ⇦ button for all programmes for that day. The word "good" appears on the display and the entries are confirmed. This procedure can also be carried out for an individual deleted day.

8 - Other settings and data entries

8.1 Entering the maximum temperature for the radiator

The adjustable maximum temperature for the radiator is 70°C. Some applications require a lower temperature of the radiator surface, e.g. in nurseries, care homes etc. To enter a maximum temperature for the radiator, proceed as follows:

Press and hold the — button to open the input screen for the maximum temperature. The most recently set maximum temperature appears at the top of the display. Use the — or + buttons to set the desired maximum temperature, then press the ⮌ button to confirm and activate the setting. The active maximum temperature will now be displayed permanently at the top of the display. This maximum temperature cannot be exceeded by the radiator, regardless of any higher values that might have been entered in the work programmes.

If you wish to deactivate the maximum temperature control, **press and hold** the + button. The word "OFF" will appear, and there will no longer be a maximum temperature shown on the standard display.

8.2 Using a password to block the entry of data by children or unauthorised persons

If you wish to prevent the entry or modification of data and processes by children or unauthorised persons, you can do this by using a password for authorised users.

To enter the password, press and hold the 👁 button. Enter the password (consisting only of numbers 1 to 4) as follows:
4 dashes will appear on the display -- a number from 1 to 4 can be assigned to each dash. Numbers can be entered by pressing the buttons 1 – 4 one after the other. The buttons are marked accordingly on the remote control. The bottom two buttons are not used for entering the password.

Example:

The password should be 4321. Press the buttons 4 3 2 1 one after the other, or use 4223, then press 4 2 2 3. After entering the numbers, press the ⮌ button to confirm. The programme will then proceed to block the remote control. The block is initially only active for remote control. Pressing the transmission button ((•)) when only a short distance away from the controller will also activate the block for the control device on the radiator. In this disabled state, it will not be possible to make any entries in the remote control without entering the password, and it will only be possible to adjust temperature settings on the control device using the +/- buttons. If a maximum temperature has been entered, it will not be possible to exceed this temperature.

To lift the block on the system, enter the password in the same way, and confirm as before. Then press the transmission button ((•)) to lift the block - the system can now be used by anyone.

8.3 Deleting entries during data collection

If you make a mistake when entering the day, time, temperature etc., the entry can be cancelled by briefly pressing the ⮌ button. The display will then return to the last step.

8.4 Delay in entering data

If no data is entered for 10 seconds, the system will return to the previous menu.

8.5 Simple switching between summer and wintertime

Press and hold the ⮌ button. Each time the button is pressed, the S – W – S information changes. When the required time is displayed, there is no need to press a button to confirm. All times are adjusted automatically.

8.6 Displaying all saved programmes

Briefly pressing the 👁 button gradually brings up on the display all saved programmes that have been sent to the control unit or that are ready to be sent by pressing the ((•)) transmission button. Once data has been entered, all entries can also be checked here. If you are not sure if you have already sent all entries to the controller just send them again. Watch the prescribed correct procedures.

9 - Automatic settings

9.1 Excess temperature protection

The temperature information from the NTC inside the heating rod (for measuring the radiator temperature) and the NTC at the mains cable outlet (for measuring the room temperature) are used to ensure correct operation of the radiator, regulated by the control unit. If the automatic control system is faulty for whatever reason and the water temperature in the radiator is increasing in an uncontrolled manner, the system has two safety mechanisms to prevent excessive pressure in the radiator. Firstly, the entire system is completely shut down electronically when a water temperature of 95°C is reached. If this protection mechanism fails for whatever reason, a simple downstream thermal fuse ensures complete shut-down.

9.2 Frost protection

The Rondo-NG control unit has an automatic frost-protection setting. This can both prevent the freezing of liquid in the radiator in extreme cases, and can also maintain a low room temperature. The default setting for the frost protection is between < 7°C and 15°C. If the radiator temperature falls below 7°C, the Rondo-NG heating system switches on automatically, heats the liquid in the radiator to 15°C and then switches off again. An ice crystal ❄ appears on the display. If the temperature falls to < 7°C again, the heating system will switch on again. This process is repeated continuously until the temperature increases to a value above 15°C again.

This safety mechanism works even if no work programme has been selected. The only prerequisite is that the control unit is in "standby" mode and is therefore being supplied with current.

9.3 Room temperature compensation

As the NTC that measures the room temperature and feeds back information to the controller is located on the back of the controller, it is close to the warm radiator. The measured temperature will therefore not accurately reflect the temperature in other parts of the room. For this reason, there is an automatic temperature adjustment of - 3°C in the control unit

9.4 Open window/door detection

This automatic function detects when the temperature falls by 2°C or more over a short period of time without any changes having been made to the control unit temperature settings. In this case, the system assumes that this reduced temperature is due to opened windows or doors.

In order to save energy, the radiator heating system is switched off automatically where the heating system was in operation at the time. The controller checks the room temperature at regular intervals, and compares it with the stored measured value. The heating will remain switched off for as long as the difference increases. As soon as the temperature is no longer falling, the heating is switched on again and will follow its set programme. If the temperature falls below the 7°C mark while the temperature is falling, the frost protection (see above) will automatically switch on.

10 Important points

10.1 Locked system

If the remote control and the controller have been disabled by a password, the ⏻ button on the controller will be disabled. It will therefore not be possible to switch to "standby" mode. If you wish to do so, you will firstly need to lift the block on the system by entering the password, and you will then be able to use the button.

10.2 Symbols on the display

If the remote control has been disabled by a password and you try to make an entry, the display "Lo Ct" will appear and you will not be able to make the entry.

Once a password has been successfully entered to disable the system, the word "good" will appear and the remote control will be disabled. This symbol is also shown to confirm successful entry for other entries, e.g when entering a maximum temperature.

10.3 Sending data from the remote control to the controller

All data sent from the remote control to the controller can only be received if:

- The transmission is performed with a short distance (max. 8 metres) between the controller and the remote control, there are no obstacles between the controller and the remote control, and the controller is switched to function P3.
- The remote control is not password-protected. If the remote control is password-protected, remove the protection and send this change to the controller as well.
- The remote control batteries are in perfect condition.

10.4 Low remote control batteries

If the batteries are low, this is indicated by the display becoming gradually weaker. This means that the batteries should soon be replaced.

11 Recycling and disposal

The product contains recyclable materials and materials that are harmful to the environment. Therefore, do not dispose of the product with household waste. Instead, send the heating system to a collection point for electronic or electrical waste.

12 Technical specifications

General specifications for the Rondo-NG control unit with permanently attached electrical heating rod	
Voltage	230 V, 50 Hz
Max. heating rod output	1000 Watt
Insulation class	I or II
Protection class	IP X4
Controller diameter	70 x 60 mm (oval)
Controller depth	50 mm
Housing colour	White or chrome
Connecting cable	White, L = 1.5 m
Cable end	Schuko plug or stripped
Grey cable on request	Other outputs on request
IR remote control	
2 batteries (not included)	1.5 V - LR03 AAA

Information on heating rods		Housing surface	Codes for finished product without remote control	
Immersion length (mm)	Output (W)	White/ chrome	Without plug	With Schuko plug
300	150	White	RNGCP6W0150	RNGCP6W0150SC
		Chrome	RNGCP6C0150	RNGCP6C0150SC
350	200	White	RNGCP6W0200	RNGCP6W0200SC
		Chrome	RNGCP6C0200	RNGCP6C0200SC
370	300	White	RNGCP6W0300	RNGCP6W0300SC
		Chrome	RNGCP6C0300	RNGCP6C0300SC
430	400	White	RNGCP6W0400	RNGCP6W0400SC
		Chrome	RNGCP6C0400	RNGCP6C0400SC
450	500	White	RNGCP6W0500	RNGCP6W0500SC
		Chrome	RNGCP6C0500	RNGCP6C0500SC
560	600	White	RNGCP6W0600	RNGCP6W0600SC
		Chrome	RNGCP6C0600	RNGCP6C0600SC
630	700	White	RNGCP6W0700	RNGCP6W0700SC
		Chrome	RNGCP6C0700	RNGCP6C0700SC
700	800	White	RNGCP6W0800	RNGCP6W0800SC
		Chrome	RNGCP6C0800	RNGCP6C0800SC
760	900	White	RNGCP6W0900	RNGCP6W0900SC
		Chrome	RNGCP6C0900	RNGCP6C0900SC
830	1000	White	RNGCP6W1000	RNGCP6W1000SC
		Chrome	RNGCP6C1000	RNGCP6C1000SC
Standard outputs are 300 W, 600 W, 900 W		Needed IR remote control		
		For all models	REMRNG001	

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