

TERMA

SINCE 1990

User Manual

Heating Element and Electric Radiator

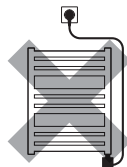
ONE



Electric radiator

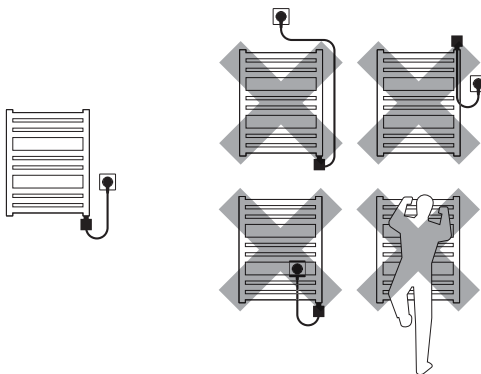
Guide to safe installation

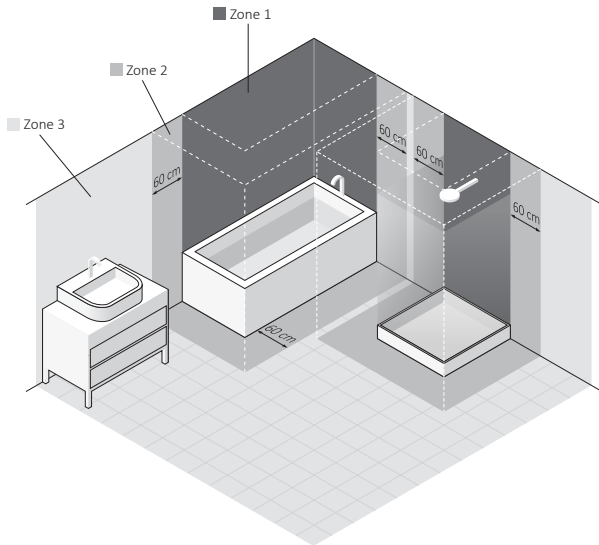
1. Do not install the radiator over or under an electrical socket point.
2. Your electric heater should be filled with a carefully measured amount of liquid. In the case of loss of heating medium, or in any other case which demands its supplementation, contact your supplier.
3. If the device is not equipped with an external temperature controller do not use the device in a small room while unsupervised disabled or incapacitated individuals are inside it. Only use the device if those individuals are under constant supervision.



4. Install the electric dryer so that the lowest tube is at least 600 mm above the floor.
5. The electric installation to which the heater is permanently connected must have the right current differential and overcurrent relay (R.C.D.) of 30 mA. An Omnipole cut-out is required for disconnecting the device on all poles, via joints positioned at least 3 mm apart.
6. The device is suitable for connection in zone 3 of a bathroom, as defined by applicable regulations, unless otherwise specified by regulations applicable in the country of installation and use.

Attention: the device must be installed out of reach of persons in the bathtub, shower or pool.





7. The device should only be installed by a qualified installer in accordance with the applicable regulations regarding safety and all other regulations.
8. All installations to which the device is connected should comply with regulations applicable in the country of installation and use.
9. Extension leads or electric plug adapters should not be used in order to supply power to the heater.
10. The device is intended for home use only. Use it solely as described in the manual.
11. Fitting and Installation of the device must be carried out in accordance with all local regulations for electrical safety, including installation within permissible locations only. Observe bathroom electrical zone regulations.

12. Ensure that the heater has been installed on a wall in accordance with its installation manual.
13. Please forward this instruction manual to the end user.

...additionally, when installing (by yourself) the heating element in a radiator.

14. Ensure that the power cord does not touch the hot parts of the heating element or radiator.
15. The heating element must be fully submerged in the heating liquid during its operation.
16. It is permitted to test the heating element in the open air (but never inside the empty radiator) for a period not longer than 3 seconds.

CAUTION: The heating element and radiator can heat up to high temperatures. Handle with caution, do not touch the hot device.

17. Never turn the heating element on in an empty radiator!
18. Before installing or removing the device, make sure it is disconnected from the power source.
19. Do not open the device — any interference with internal components will invalidate the warranty.
20. The heating element's power output must not exceed the radiators power output for the parameters 75/65/20° C.

Safety requirements — use

21. Note: Some parts of the radiator can be very hot and can cause burns. Pay special attention to the presence of children or people with disabilities.
22. The Electric radiator and the heating element are not a toy. Children under the age of 3 should not be allowed within close proximity of the device without the supervision of an adult. Children aged 3 to 8 should only be allowed to operate the heater (except the cleaning) when it has been properly installed and connected. The child must be under adult supervision or have been trained to safely operate the device while understanding the risks.
23. Children above the age of 8 and people with disabilities are allowed to operate the device. But they must be under adult supervision or have been trained to safely operate the device while understanding the risks.
24. If the device is used as a clothes and towel dryer, ensure that the fabrics drying on it have only been washed in water, avoiding contact with any harsh chemicals.

25. If the power cord is damaged the device should not be used. Unplug the device and contact the manufacturer or distributor.
26. Regularly check if the radiator is filled with a liquid. Regularly check the device for damage to ensure it is safe to use.
27. Do not allow flooding into the heating element casing.
28. The device must be disconnected from the mains during cleaning and maintenance.
29. The pressure in the radiator should not exceed 1MPa (10 bar). Ensure that an air cushion is preserved in electric radiators. In central heating systems, leave one or both valves open to prevent pressure build up due to the thermal expansion of the liquid.

Installation or disassembly

Detailed information on all possible ways of the device installation or disassembly, is available from the manufacturer or importer of the item (see footer at the bottom of the manual). Below are the most important requirements and guidelines which should be strictly followed in order to ensure a long term, unfailing operation of device.

Before installation

1. Read chapter: "Guide to safe installation".
2. If you are installing the "ONE electric radiator" go straight to point 10.
3. The device is intended for operation in a vertical position with heating element turned upwards.
4. Always use the correct radiator approved heating mediums only (water, water with addition of radiator approved anti-freeze agent only, selected types of oil).
5. Do not turn the device on if not immersed in water or other liquid as it could cause damage to thermal fuse and will not be liable for claim under warranty.

6. Ensure all necessary safety measures in order to avoid excessive pressure inside the radiator (allow the right space for airbag or leave at least one of the central heating valves open).
7. Do not fill the radiator with liquids of temperature higher than 65° C.
8. Do not install the device in central heating systems where temperature of liquid inside the system may exceed 82° C.
9. Make sure that connection "radiator — heater" is tight prior to filling the radiator with heating liquid (does not concern devices preinstalled at the manufacturer's or heater versions built-in inside the radiator.)
10. When connecting the device to installation, follow below instructions:
 - a. Brown wire — connection to live circuit (L)
 - b. Blue wire — connection to neutral circuit (N)
 - c. Yellow & green wire — connection to earth (PE).
11. For detailed installation hints – see the last pages of this manual.

Intended use

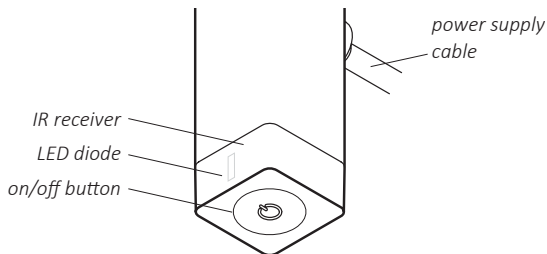
The ONE is an electric heating element device intended for installation inside water towel radiators (electric only or connected to the central heating systems). The ONE electric radiator or any radiator with the ONE heating element installed is designed for the purpose of drying clothes and / or towels or heating rooms.

Technical information

Electric data:	230 V / 50 Hz
Insulation class:	Class I
Casing protection class:	IPx5
Heating output:	120, 200, 300, 400, 600, 800, 1000 [W]
Connection types:	PW — straight cable with plug (type Z) SW — spiral cable with plug (type Z) PB — straight cable without plug (permanent connection to electric installation – see “Guide to safe installation” p.5)
Radiator connection:	thread G ½"

Functions and use

Heater One has two radiator temperature settings (45° C and 60° C) as well as automatic switch-off after 2 hours (TIMER). The on/off button is also used for the purpose of changing settings, while different colours of the LED diode indicate current setting. The device has a built-in IR receiver for wireless communication with an external controller which provides additional functions to the device.



Turning the device on and setting heating temperature

The following settings are activated by pressing of the on/off button in the following order:

1. The device is turned on and automatically set to 45° C;
2. The heater switches to 60° C;
3. The heater is turned off. Current setting is indicated by a LED diode:
 - Heater is off — diode is not on.
 - Heater is on setting 1 (45° C) — yellow light.
 - Heater is on setting 2 (60° C) — red light.

Device setting is remembered also after electricity cut-off.

Automatic switch-off (timer)

Pressing and holding of the on/off button activates the TIMER function — the heater works for 2 hours on setting 60° C, after which it switches off. Active TIMER is indicated by pulsating diode. Regardless of whether the heater is currently on or off the TIMER can be activated by pressing and holding the button. A quick press of the button then turns the device off.

Anti-freeze function

When the device is off but still has a live feed, and the temperature inside the room falls down below 6° C the device will automatically turn on and start heating. This function will prevent the heating medium inside the radiator from freezing. When this function is active every 4 seconds a flashing orange LED diode is visible.

Remote control mode (wireless communication)

If there is a dedicated IR controller inside the room, which sends signals to the heater, then, the first signal correctly received by the heater, automatically switches the device into receiving mode. When in this mode, the device will heat with the heat output dictated by the external controller while still controlling temperature not to exceed approximately 60° C. Remote mode is indicated by the diode shining with constant blue light. Every correctly received signal from the external controller is indicated by short flash of the diode. If there is a break in communication (the heater does not receive a signal from the external controller for 30 minutes), the heater will switch to a signal-awaiting mode. The blue diode will start pulsating steadily and the device will automatically turn off with the antifreeze function still active until the connection is reached again.

TIMER function can be used also in remote mode (in such a case, after the timer operation has seized, the heater will not turn off but it will return to the remote control operation).

Malfunction alerts

The device constantly monitors all parameters which may indicate its damage or any adverse phenomena, and automatically activates necessary protective procedures. Those are, amongst others: protection against operation in "dry conditions", monitoring of controlling and measuring systems, monitoring an "open window" or "free flow of water in a central heating system". All malfunction alerts are indicated by a flashing white diode.

Maintenance

- Always disconnect the device from electricity before you start cleaning the radiator.
- Recurrently check level of the heating medium inside the radiator.
- Clean the item with a dry or damp cloth with a small amount of detergent without any solvents or abrasive agents.

Before disassembly

1. Disconnect the device from electric circuit and ensure that the radiator has cooled down before you start disassembling the radiator.
2. Be careful — electric radiator filled with heating liquid may be very heavy. Ensure all necessary safety measures.
3. Prior to disassembly make sure that water inside both the radiator and installation does not cause any damage (close the valves, empty the radiator, etc. if required).

Utilization



This product should not be disposed of as general waste but should be brought to the appropriate collection point for recycling of electric and electronic devices. This information is present on the product, user manual and on packaging. Information on the appropriate point for used devices can be provided by your local authority or vendor of the product.

Thank You for your effort towards environment protection.

Troubleshooting

Symptom		Possible cause	Advised action
LED diode is not on, heating element does not heat		Damaged electronics	contact Your local Distributor
LED diode pulsing: WHITE & RED or WHITE & YELLOW		The radiator is not warming up quickly	<ol style="list-style-type: none"> 1. Check and confirm that the heating element's output is not too low for the size of radiator. 2. (Dual Fuel only) - check the flow of the heated agent is it flowing back into the central heating system, if this is the case you will need to close one of the valves (flow or return). In the case of a 'side connection' you will need to close the upper valve. If the problem continues contact Your dealer.
LED diode pulsing WHITE (mal-function alert)	TWO flashes	Low water level (work in dry conditions)	<ol style="list-style-type: none"> 1. May happen once or twice after switching on - this is not a malfunction; 2. If lasts longer - check the lever of heating agent level
	THREE flashes	Overheating	<p>Check and reduce the water temperature in the central heating system-must not exceed 82 deg</p> <p>Check and confirm that the heating element's output does not exceed the recommended output of your radiator. Turn the heating element off with the ON/OFF button and wait for 20 min. If the radiator is still hot, disconnect it from its electrical supply - contact the Distributor.</p>
	FOUR flashes	Temperature sensor damaged	Contact Your local Distributor
	FIVE flashes	The radiator is not warming up quickly	<ol style="list-style-type: none"> 1. Check and confirm that the heating element's output is not too low for the size of radiator. 2. (Dual Fuel only) - check the flow of the heated agent, is it flowing back into the central heating system, if this is the case you will need to close one of the valves (flow or return). In the case of a 'side connection' you will need to close the upper valve. If the problem continues contact Your dealer.

Symptom	Possible cause	Advised action
BLUE diode does not light (lack of IR communication)	Problem in the external programmer	Check the batteries Place the programmer close to the heating element and change the temperature setting - if the devices communicate correctly, LED diode lights blue and blinks after each order correctly received.
	Problem with the heating element	contact the Distributor
YELLOW and RED diode light but radiator still cool	Thermal fuse or electronics damaged	contact the Distributor
BLUE diode lights but radiator still cool	Room temperature is equal or higher than the one set in external programmer	Everything is working. To make the heating element heat you may turn on the ON mode in external programmer or the Dryer mode in the element. (Note: Turning the controller 'OFF' will not terminate the connection between the heating element and the controller, the only way to do this is to remove the batteries from the controller or move it to another room)
BLUE diode pulsing	The heating element is no longer communicating with the IR controller	Is the controller still in 'line of site' of the heating element or is it being blocked by an object or has it been placed in another room, clear the obstruction or move the controller. Check the batteries. If not and the problem still exists - contact the Distributor

Construction of the device as well as physical characteristics of different heating mediums, may cause an uneven temperature distribution in the radiator, which may cause that bottom pipes as well as the the highest one can be cold. This type of behavior is absolutely normal and is not an effect of the heater malfunction.

