

User Manual

Electric Heating Element

MOA BLUE

User Manual

Our products have been designed and manufactured in such a way to ensure that all quality, functionality and aesthetic requirements are met. We would like to congratulate you on the purchase of this great product and wish you a pleasant experience with it.

Electric radiator

Guide to safe installation and use.

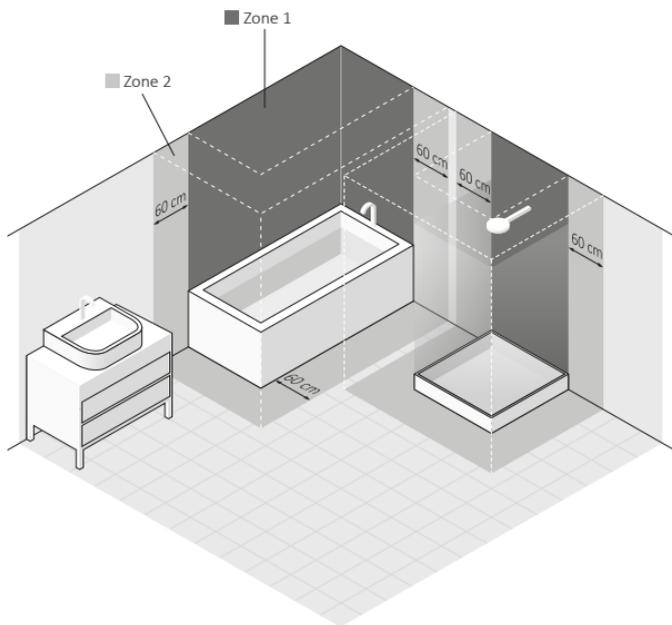
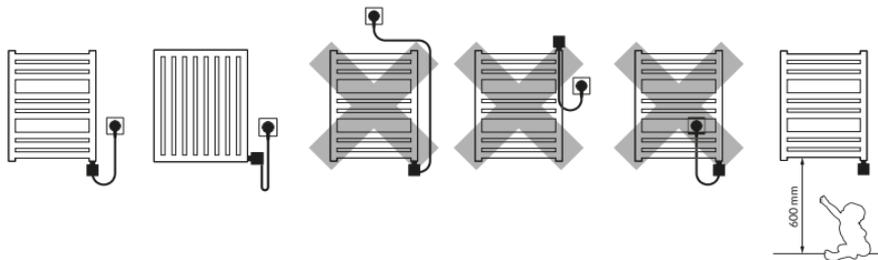
1. Do not install the heater under an electrical socket point.
2. Your electric heater should be filled with a carefully measured amount of liquid. In the case of loss of heating medium, or in any other case which demands its supplementation, contact your supplier.
3. If the device is not equipped with a room temperature controller or the controller has not been turned on, 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. Electric heater is 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 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.

5. 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.
6. 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.
7. To ensure the safety of very small children, install the electric dryer so that the lowest tube is at least 600 mm above the floor.
8. The device should only be installed by a qualified installer in accordance with the applicable regulations regarding safety and all other regulations.
9. All installations to which the device is connected should comply with regulations applicable in the country of installation and use.
10. Extension leads or electric plug adapters should not be used in order to supply power to the heater.

11. While connecting the radiator to electric installation ensure that the circuit has a 30 mA residual-current circuit breaker and an appropriate over-current circuit breaker. With the permanent installation (cable connection without plug) it is also mandatory to have an omnipolar cut-off for disconnecting the device on all poles, by points of contact with the clearance of 3 mm.
12. The device version labelled PB can be installed in bathrooms in zone 1, as defined by applicable law, subject to any additional regulations concerning electrical installations in wet areas. Other versions of the device can be installed in Zone 2 or beyond.
13. The device is recommended for use solely as described in the manual.
14. Ensure that the heater has been installed on a wall in accordance with its installation manual.
15. Please forward this instruction manual to the end user.



Electric Heating Element

Safety requirements – installation

1. Fitting and connection of the heating element should only be performed by a qualified installer.
2. Connect the unit to a sound electrical installation (see the ratings on the heater).
3. Switching on the heating element in the open air to test the device is permitted for a maximum of 3 seconds.
4. Never test a heating element that is already installed. Do not turn the heating element on in an empty radiator!
5. Ensure that the power cord does not touch the hot parts of the heating element or radiator.
6. Before installing or removing the device, make sure it is disconnected from the power source.
7. Do not open the device – any interference with internal components will invalidate the warranty.
8. The heating element's power output should not exceed the radiators power output for the parameters 75/65/20° C.

9. The pressure in the radiator must not exceed 1 MPa (10 bar). Ensure that an air cushion is preserved in electric radiators. In central heating systems, leave one valve open to prevent pressure build up due to the thermal expansion of the liquid.
10. The device is intended for home use only.
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.

Safety requirements – use

1. The heating element must be fully submerged in the heating liquid during its operation. A radiator connected to the central heating system and equipped with an electric heating element must be airvented regularly.
2. Regularly check the device for damage to ensure it is safe to use.
3. If the power cord is damaged the device should not be used. Unplug the device and contact the manufacturer or distributor.
4. Do not allow flooding into the heating element casing.
5. Do not use the heating element in heating systems where the water temperature exceeds 82°C.

6. The heating element and radiator can heat up to high temperatures. Please be cautious – avoid direct contact with the hot parts of the equipment.
7. Do not open the heating element casing.
8. When operating the heating element in a radiator connected to a central heating system, always leave one of the valves open.
9. Ensure that minors aged 8 and above or those with a physical or mental disability are supervised if operating the device.
10. The device is not a toy. Keep it out of the reach of children.
11. The device must be disconnected from the mains during cleaning and maintenance.
12. Cleaning of the equipment by children under 8 years of age is only permitted under appropriate supervision.

Intended use of device

The heating element is an electric device intended solely for installation in radiators (standalone or connected to the central heating system) to serve as space heaters, or clothes and towels dryer.

Heating element power output should be matched with radiator output for parameters of 75/65/20°C.

Technical information

Model markings (power cable type):
– PW (Straight cable with plug)
– PB (Straight cable without plug)*
– SW (Spiral cable with plug)

Power supply: 230 V / 50 Hz

Appliance class: Class I

Towel rail connection thread: G 1/2"

Ingress protection rating: IPx5

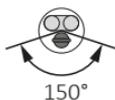
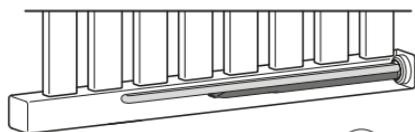
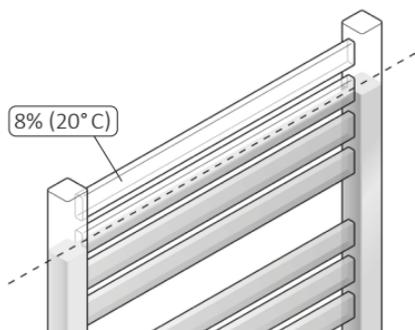
Temperature measurement: Internal radiator temperature and external room temperature

Heat outputs available:	120	200	300	400	600	800	1000	1200	[W]
Length of heating element:	315	275	300	335	365	475	565	660	[mm]

* Device intended to be connected permanently to the system

Installation or removal

Detailed information demonstrating the different ways of installing or removing a radiator heating element is available from the manufacturer or importer (see footnotes at the end of the manual). Below we list some basic requirements and principles which must be followed to ensure long term, reliable operation of the product.



When the heating element is installed horizontally, it must be rotated to such an extent that the single tube, which houses the temperature sensor, is positioned as low as possible.

Before installation or first use:

1. Read the chapter *Safety requirements – Installation*.
2. Fit the heating element using the correct spanner (size  22).
3. The heating element must be installed at the bottom of the radiator, perpendicular to the radiator pipes, while preserving space for the proper circulation of the heating medium.
4. Use a suitable heating medium for filling the electric radiator, i.e. (water, special products based on water and glycol for use in central heating systems, or oil which complies with the requirements of the manufacturer of the radiator and heating element).
5. **DO NOT SWITCH THE HEATING ELEMENT ON IF IT IS NOT FULLY IMMERSSED IN RADIATOR HEATING MEDIUM (APPLIES ALSO TO THE FIRST USE)!**
6. Make sure an adequate air cushion is present to protect against excessive pressure build up within the electric only radiator (or leave one of the radiator valves open in central heating system).
7. When filling the radiator with hot liquid insure that the liquid temperature does not exceed 65°C.

8. Follow the subsequent guidelines when connecting the electrical installation:
 - a. Brown wire – live connection to the circuit (L).
 - b. Blue wire – connect to neutral (N)
 - c. Yellow & green wire – earth connection (PE).
 9. Before filling the radiator with heating medium, ensure that the heating element is fitted properly and that it is water tight.
 10. In central heating system radiator must be fitted with the valves enabling disconnection of the radiator from the rest of the system.
 11. The temperature of the heating agent in the central heating system must not exceed 82° C!
 12. For detailed installation hints – see the last pages of this manual.
3. Before disassembly, close the appropriate valves and drain the radiator completely to avoid causing any damage.

Product disposal



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 provided by the sign on the product, user manual and packaging. Information on the appropriate point for used devices can be provided by your local authority, product distributor or the store from where the product was purchased. Thank you for your effort towards protecting the environment.

Maintenance

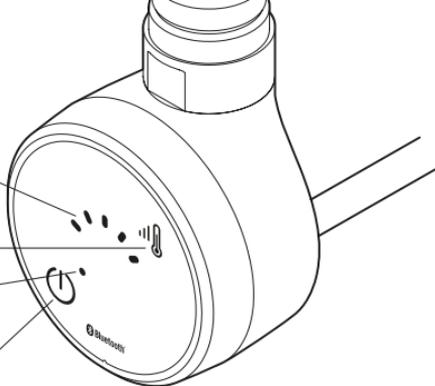
- Always disconnect the device from electricity before you start cleaning the radiator or heating element.
- Recurrently check level of the heating medium inside the radiator.
- Clean the item with a dry or damp cloth with a small amount of detergent without any solvents or abrasive agents.

Notes prior to removal:

1. Before dismantling permanently, disconnect the heating element from the mains and ensure that the radiator is not hot.
2. Be aware. A radiator filled with liquid can be very heavy. When moving the radiator, ensure that you take the necessary safety precautions.

MOA Blue

- Blue LEDs – temperature setting indicators
- Temperature adjustment and Bluetooth pairing
- RGB LED – TIMER, schedule and Bluetooth communication indicator
- On/Off button and TIMER switch



MOA Blue electric heating element is equipped with a radiator temperature sensor (active by default!) and an additional room temperature sensor that can be activated by a mobile control application.

Turning on the unit for a specified period of time does not mean that it will receive the same maximum power at all times. The element when switched on, works at nominal power level for a short time to reach programmed temperature and then periodically turns itself on and off, consuming just as much energy as is needed to maintain the set temperature taking into account external conditions.

The heating element's construction, as well as the physical characteristics of the heating medium, cause the lower radiator tubes (especially the bottom two) to have a lower temperature than the rest of the radiator – this is perfectly normal.

The device is equipped with a thermal fuse, which in emergency situations protects against exceeding critical temperatures (this fuse may be damaged at the temperature of 82°C – it refers in particular to heating elements installed in radiators connected to a central heating system).

The MOA can be operated using the buttons on the housing (see section Manual Operation) or via a mobile device – smartphone, tablet (see section Remote Control).

Manual Operation

(a mobile operating device with installed control application may, but does not need to be in the range)

Press briefly the  key to switch on the heating element.

Use the  key to set the required temperature level. It is possible to set 5 temperature levels that correspond to a temperature range of 30 ... 60° C when measuring the internal radiator temperature or a range of 15 ... 30° C when measuring the room temperature.

Each short press of the  key increases the temperature setting from 1 to 5, the next press returns the setting to level 1, and so on.

The number of lit up, **blue diodes** corresponds to the selected temperature level of the device.



TIMER mode

Press and hold the  key to activate the 2 hour TIMER, i.e. to dry a towel or warm up a room. **Single RGB LED will turn red.**



When the set time elapses, the heating element automatically returns to the settings from before the activation of the timer function. With the TIMER function active, you can freely modify the operating temperature ( key).

If the heating element was switched off prior to timer start-up, the unit will switch itself off automatically after the time elapses.

Press briefly the  key to stop the timer function at any time.

ANTI-FREEZE protection

When the appliance is not in use (either off or scheduled to be off) but remains connected to the mains and the temperature in the vicinity of the temperature sensor drops below 6° C, the heating element will automatically switch itself on to prevent the heating medium inside the radiator from freezing. Activation of this function is signaled by a flashing **middle blue LED**.

Remote Control

The MOA Blue has a built-in and continuously active Bluetooth Low Energy communication module for remote control of the heating element, using popular mobile devices – smartphones and tablets, both with Android or IOS operating systems. The heating element is visible by other Bluetooth devices and appears as MOA Blue Terma. **You may need to enter a default authorization code: 123456.**

To start the pairing mode in MOA, press and hold  for approx. 5 sec. Pairing mode is indicated by a flashing single, **blue** RGB LED.



Pairing mode, when activated, lasts 30 seconds.

The blue RGB LED will light up each time an active exchange of information between the heating element and an external control device, takes place.

TIMER mode

The control application allows the Timer to be set for a period of 1 ... 240 minutes in the full range of temperatures supported by the heating element and any temperature measurement method – either internal radiator temperature or external room temperature. Activation of the TIMER function is indicated by a **red** RGB LED.



Automatic heating program schedule

The control application allows you to program many different 7-day work schedules and to upload any of the programmed schedules to the memory of any Blue heating element paired with the mobile device (see Tutorial in the control application). When uploading a schedule to the heating element's memory, a message confirming the action appears on the portable device screen, but does not yet indicate a change in the heating element's operating mode.

When the schedule is activated, the RGB LED lights up in green.



ANTI-FREEZE protection

Please go to Manual Operation section. A message informing about activation of the anti-freeze protection will appear on your mobile device screen.

TROUBLESHOOTING

Problem	Possible cause	Solution
Device is connected to electricity, LEDs don't light up.	Power connection problem.	Check the power wire connection, plug and the socket.
Heating element is not heating, outermost LEDs are flashing alternately. One LED flashes longer.	Temperature sensor damage.	Disconnect the device completely, wait until the radiator cools down and re-connect it again.
Heating element is not heating, outermost LEDs are flashing alternately.	Device overheated.	Check and confirm that the heating element's output does not exceed the recommended output of your radiator. Check and reduce the water temperature in the central heating system – must not exceed 82°C. In electric-only version check, if the radiator is properly filled with the heating agent.
During operation the blue RGB LED comes on and off.	Heating element communicates with your mobile device.	Heating element works properly.
The device heats despite turning it off with the Φ button.	Electronics damaged.	Disconnect the device completely, wait until it cools down and re-connect it again.
If the problem persists please contact Your local Distributor.		

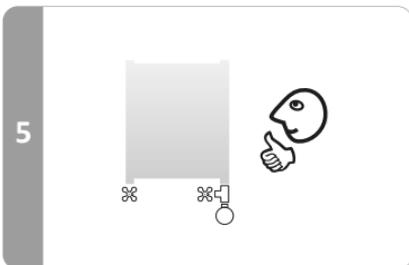
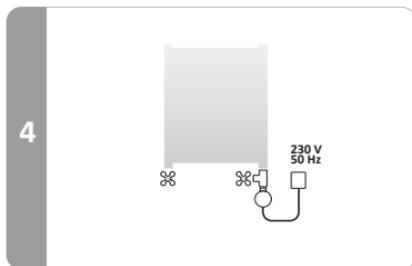
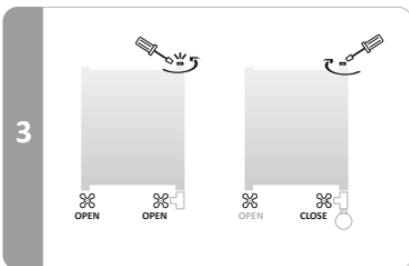
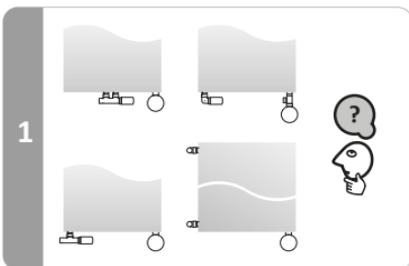
Warranty terms & conditions

1. The subject of this warranty is a Terma electric heating element with control head. The product name and characteristics are specified on the packaging.
2. By accepting the device on purchase, the Client confirms that the product is of full value. The Client should immediately inform the Seller of any discovered faults – otherwise it will be understood that the Product was faultless at the time of purchase. This refers especially to any faults or damages of the control panel case.
3. The Warranty for period for the Product is 24 months from the date of purchase, but no longer than 36 months from the date of production.
4. The proof of purchase (receipt, invoice, etc.) constitutes the basis for warranty claims. Lack of the proof of purchase allows the manufacturer to reject a warranty claim.
5. This warranty does not cover any faults and/or damages caused by:
 - incorrect (not in accordance with the manual) installation, use or disassembly,
 - incorrect use of the heating element (i.e. for any purpose that is not specified by the Manufacturer as intended for this type of product),
 - unqualified persons tampering with the product,
 - customers after the purchase.
6. The Central Heating system should be fitted with lock-shield valves, enabling disassembly of the radiator or the heating element and its control head without the necessity of emptying the whole system of the heating agent. Any problems or expenses arising from the absence of lock-shield valves in your system cannot be used as grounds for any claims against Terma.
7. The attached Product Manual is an integral element of the Warranty. Please read it carefully prior to the installation and use of the Product.
8. The Manufacturer is obliged to remove any production fault within 14 working days of receipt of the faulty device at the Manufacturer's premises.
9. Should the repair be impossible, then the manufacturer is obliged to replace the faulty Product with a new, full-value unit of identical parameters.

EN Dual Fuel Radiator

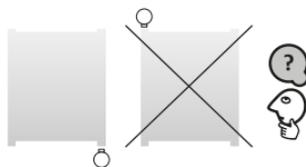
EN NEVER OPERATE THE HEATING ELEMENT WITH BOTH VALVES CLOSED.

HINT: Do not turn on the heating element and your central heating at the same time.



EN Electric only Radiator

1



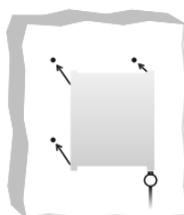
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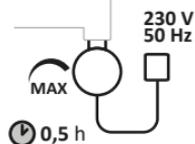
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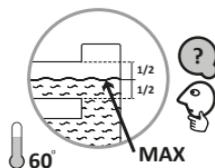
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