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 an external temperature sensor do not use the device in a small room if 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. The electric installation to which the heater is connected should have the right current differential and overcurrent relay (R.C.D.) of 30 mA. With the permanent installation (cable connection without plug) it is also mandatory to have an omni-pole cut-out for disconnecting the device on all poles, by points of contact with the clearance of 3 mm.

12. The device version labelled PB or MS 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.

Zone 1

Zone 2

60 cm

60 cm

60 cm

60 cm

60 cm
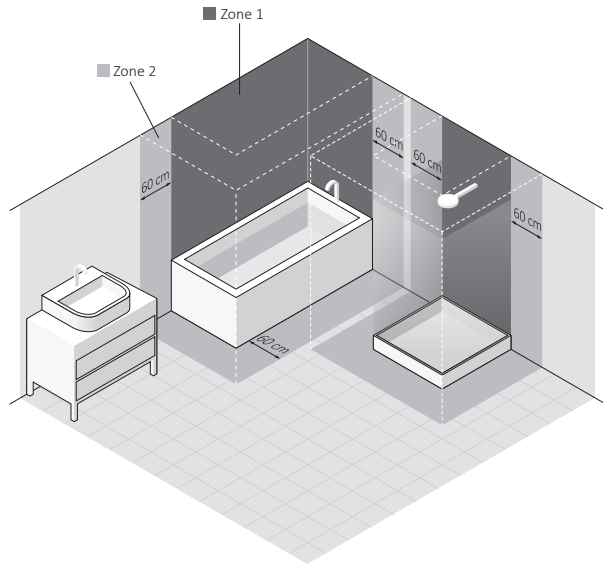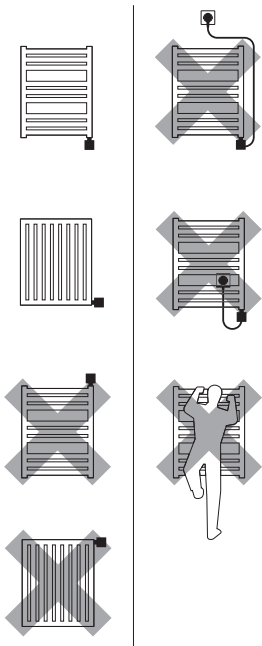
Electric Heating Element

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 installa-

tion 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.

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).

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) – MS (screw connection + on/off switch)* ** Device intended to be connected permanently to the system*
Power supply	230 V / 50 Hz
Heat outputs available	120, 200, 300, 400, 600, 800, 1000 [W]
Insulation class	Class I
Towel rail connection thread	G 1/2"
Casing protection class [IP]	IPx4: KTX-1 (all versions), KTX-2...4 — only the MS version IPx5: KTX-2...4 (except the MS version)
Temperature measurement:	Temperature inside the radiator: all devices without an external IR transmitter, room temperature: the KTX-4 in a set with the DTIR or TTIR transmitter

Power output of heating rod [W]	120	200	300	400	600	800	1000
Length of heating rod: [mm]	325	285	310	345	375	485	575

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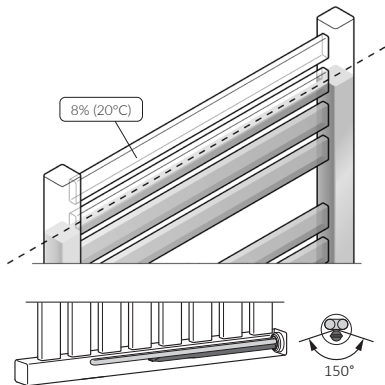
When the heating element is installed horizontally, it must be rotated to such an extent that the single tube, which houses the temperature sensor, is positioned as low as possible.

Before installation or first use:

1. Read the chapter *Safety requirements —Installation.*
2. Fit the heating element using the correct spanner (size 🔧 24).
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. Check the distances between the individual heating element tubes and bend if necessary.
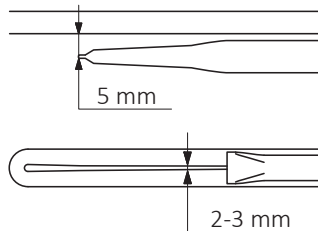
6. Do not switch the heating element on if it is not fully immersed in radiator heating medium (applies also to the first use)!

7. 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).

8. When filling the radiator with hot liquid insure that the liquid temperature does not exceed 60° C.

9. 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).

10. Before filling the radiator with heating medium, ensure that the heating element is fitted properly and that it is water tight.

11. In central heating installation radiator must be fitted with the valves enabling disconnection of the radiator from the rest of the system.

12. The temperature of the heating agent in the central heating system must not exceed 82°C!

13. For detailed installation hints — see the last pages of this manual.

Notes prior to removal:

1. Disconnect the device from electric circuit and ensure that the radiator has cooled down before you start disassembling the radiator.

2. Release the screw at the back of the controller casing.

3. Take off the controller from the heating element.

4a. In case of dual-fuel radiator, close the valves and empty the radiator.

4b. Be careful — electric only radiator filled with heating liquid may be very heavy. Ensure all necessary safety measures.

5. For disassembling the heating rod use a spanner no 24.

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.

Warranty terms & conditions

1. The subject of this warranty is a Terma electric heating element. 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 that are due to:
   - 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),
   - product being handled by unauthorized persons,
   - fault's or damages caused by the Client after having purchased and accepted the product.

6. The Central Heating installation 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 installation cannot be used as grounds for any claims against the Supplier or Manufacturer of the device.

7. The Manufacturer is obliged to remove any production fault within 14 working days of receipt of the faulty device at the Manufacturer's premises.

8. Should the repair be impossible, then the manufacturer is obliged to replace the faulty product with a new, full-value unit of identical parameters.

9. The attached User Manual is an integral element of the Warranty. Please read it carefully prior to the installation and use of the product.

KTX 1

ECONOMICAL mode
On/Off
COMFORT mode
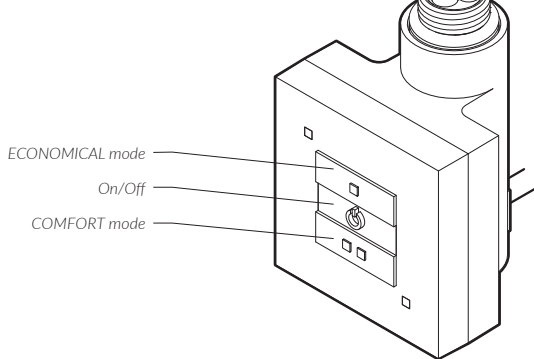
Heating element unit heats the radiator that it is installed in. The device has a user-friendly power regulation system allowing the device to work with only a half or full of its heating output.

Button ▭ is used to turn the device on / off. When turned off and then back on again, the device will heat with the same heating output as before it was turned off.

Button ▭ is used to set the ECONOMICAL mode — this is indicated by a yellow diode in the top left corner (the device will start operating by turning itself on and off every 7 seconds).

Button ▭ is used to set the COMFORT mode (the device will operate with its full output continuously) — this is indicated by a red diode in the bottom right corner.

Built in temperature sensor protects the user from getting burnt by limiting the maximum operating temperature to 60°C. Additionally, a thermal fuse, built into the heating rod, protects your radiator from critical overheating (the fuse can get damaged in temperatures higher than 82°C — this is especially important for heating elements installed in dual fuel radiators, connected to central heating system).

Construction of the heating element unit as well as physical characteristics of the heating agent cause that the bottom pipes (especially the two at the very bottom of the radiator) may have a lower temperature than the remaining parts of the radiator – this is a normal phenomenon.

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. Yellow diode is flashing until the temperature reaches 6°C.

Problem solving

Problem	Possible cause	Solution
Device is connected, no diodes are on, heating element does not heat.	Device is not turned on.	Turn the device using ⬛ button.
	Connection problem.	Check the connection, plug and the socket.
Heating element does not heat, diodes are flashing alternately.	Device signals malfunction, temperature sensor is damaged.	Turn the device off, wait for the radiator to cool down and turn it back on.
Heating element does not heat, diodes indicate correct operation.	Thermal fuse is burnt or heating element is damaged.	Turn the device off and back on.
Heating element heats although the device has been turned off with the ⬛ button.	Electronics damage.	Disconnect the device from its electric supply, wait for the radiator to cool down and turn it back on.
If the problem persists, please contact your local Distributor.		

KTX 2

TIMER Mode
changing parameters
On/Off

Heating element unit heats the radiator that it is installed in and precisely controls its temperature at the same time. The device has 5-step temperature regulation (buttons: $\triangle$ and $\triangledown$) within temperature range from 30-60 degrees Celsius. $\boxed{2h}$ button is used to turn the device on and off and to deactivate the TIMER Mode (if active).

Built in temperature sensor protects the user from getting burnt by limiting the maximum operating temperature to 60°C. Additionally, a thermal fuse, built into the heating rod, protects your radiator from critical overheating (the fuse can get damaged in temperatures higher than 82°C — this is especially important for heating elements installed in dual fuel radiators, connected to central heating system).

Construction of the heating element unit as well as physical characteristics of the heating agent cause that the bottom pipes (especially the two at the very bottom of the radiator) may have a lower temperature than the remaining parts of the radiator — this is a normal phenomenon.

Turning the device on does not mean that it uses the same maximum power for the whole time it is on. On turning the device on, it operates with the nominal power for a short period of time in order to heat up the radiator to the set temperature. After that, it turns itself on and off periodically, using only as much energy as it is required to maintain the set temperature of the radiator for current external conditions.

Setting 1	Setting 2	Setting 3	Setting 4	Setting 5

TIMER mode

TIMER Mode is activated by pressing the button ⏲ (yellow diode turns on).

1. TIMER Mode can be used to TURN OFF the device:
    Press button ⏲ while the device is on — the device will turn off after 2 hours.

2. TIMER Mode can also be used to TURN the device ON:
    Turn the device off using the button ⏻, press the button ⏲ — the device will turn on after 2 hours, with the same temperature it was set to prior to being turned off. If the required temperature is different to the one from before when the device was turned off, set the required temperature before turning the device off.

TIMER Mode can be turned off in at any time by pressing button.

ANTI-FREEZE function

When the device is off or in the TIMER mode 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. Yellow diode is flashing until the temperature reaches 6°C.

Problem solving

Problem	Possible cause	Solution
Device is connected, no diodes are on, heating element does not heat.	Device is not turned on.	Turn the device using ⏻ button.
	Connection problem.	Check the connection, plug and the socket.
Heating element does not heat, diodes are flashing alternately.	Device signals malfunction, temperature sensor is damaged.	Turn the device off, wait for the radiator to cool down and turn it back on.
Heating element does not heat, diodes indicate correct operation.	Thermal fuse is burnt or heating element is damaged.	Turn the device off and back on.
Heating element heats although the device has been turned off with the ⏻ button.	Electronics damage.	Disconnect the device from its electric supply, wait for the radiator to cool down and turn it back on.
If the problem persists, please contact your local Distributor.		

KTX 3

time settings (clock/dryer/timer)

on/off button

parameters regulation

active 24-hour timer

timer active zone code

clock

temperature

heating indicator

Heating element heats the radiator that it is installed in and, at the same time, controls its temperature. For temperature regulation please use buttons ▲ and ▼. LCD display panel shows current temperature measured inside the radiator. After settings have been modified, display panel will flash showing the newly set temperature for a few seconds and will go back to displaying current temperature. Heating indicator ✿ will come up on the display panel if the newly set temperature is higher than the current one. In order to see the set temperature, press one of the arrows on the display.

Construction of the device as well as physical characteristics of the heating agent inside the radiator influence the way in which the heat is distributed — the temperature of the bottom pipes of the radiator (especially the two located at the very bottom of the radiator) may be lower than the temperature of the remaining parts of the radiator — this is a normal phenomenon.

Turning the device on does not mean that it uses the same maximum power for the whole time it is on. On turning the device on, it op-

erates with the nominal power for a short period of time in order to heat up the radiator to the set temperature. After that it turns itself on and off periodically, using only as much energy as it is required to maintain the set temperature of the radiator for current external conditions.

Manual mode

Manually set operating temperature is continuously maintained until the next change of parameters or until start any of the automatic functions.

Dryer mode

The Dryer Mode allows to switch on the device for a set period of time i.e. to dry a towel. When the time is out, the heating element returns to its former settings mode.

In order to activate the dryer mode, press the ☉. The shortest programmable dryer time is preset at 0,5 h. Each following press on the ☉ extends the working time by additional 0,5 h, up to maximum of 4 hours (pressing the button again ends the dryer mode and the display shows the clock icon)

In the dryer mode, the heating temperature can be adjusted — the last temperature used in the dryer mode is memorised by the device. Any future start-up of the dryer mode will start operating with the last memorised temperature.

The small numerical display shows a countdown clock telling, how much time is left until the dryer mode ends. The large numerical display shows the temperature. Initially — the temperature set and after a short while — the actual temperature. (In order to see the set temperature, please press one of the arrows on the display). After dryer mode time runs out, the device returns to its former working mode (If the device was off before the dryer mode was started, the whole device will be switched off).
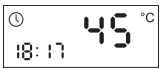
The dryer mode can be ended at any time with:

- the ☉ button — only the dryer mode will end — press the clock button until the display shows 0 h,

- the ① button — the whole device will be switched off.

Clock

Current time (hh:mm) is displayed both when the device is on and when it is off with an exception of the dryer activation time or when the device is being programmed.

Clock programming

Press both arrow buttons at the same time *Hour field will start flashing* Set the required hour using ▲ and ▼ Confirm it by pressing ⏻.	🔆:00 45 °C
Minute field is flashing Set the required minutes using ▲ and ▼ confirm it by pressing ⏻.	18:🔆 45 °C
Set time is displayed. Clock programming is finished.	🕐 18:17 45 °C

In case of a power cut, the device memorises last displayed time. If the hour shown on the display flashes, it may mean that the time shown is incorrect. Confirm the time by pressing any button or reset the time.

24-Hour timer
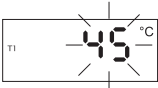
24-hour Timer enables specification of 4 different time zones (T1, T2, T3 and T4), which allow different temperature settings and, including periods when the device is switched off.

The start of every time zone is programmed subsequently from T1, T2, T3 to T4 (hour and minutes), and the temperature for every time zone is specified. The entire cycle is repeated every day on condition that the device is on and Timer is active.

Turning the device off does not delete the Timer settings. After turning the device back on with the ⏻ button the Timer will be activated with the clock settings from before the device was turned off.

In order to deactivate the Timer press the ⏻ button for a while, use the arrows to set the Timer to OF and press ⏻ again (the device will switch to the Manual Mode).

Timer programming

Turn on the device by pressing ⏻.	
Press and hold ⏲ → button ON or OF will start flashing	On
Activate (On) or deactivate (Of) the mode with the use of ▲ and ▼. Confirm by pressing ⏲.	OF
Clock field is flashing on the display panel and T1 is on	T1 00:00
Set the START of the first time zone with the use of ▲ and ▼. Confirm by pressing ⏲.	
Set the START of subsequent time zones T2 – T4 with the use of ▲ and ▼. Confirm by pressing ⏲.	
Temperature field is flashing on the display panel and T1 is on.	T1 45 °C
Set the required TEMPERATURE for T1 zone using ▲ and ▼. Confirm by pressing ⏲.	
Set the required TEMPERATURES for the time zones T2 – T4.	
Confirm by pressing ⏲.	

Display panel is no longer flashing, TIMER icon and a relevant time zone code T(1-4) depending on current time are on	⏲ T2 15:36 58 °C
TIMER programming is finished.	
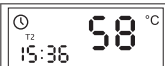
Attention: When the 24 hour TIMER is on, the user can temporarily change the set temperature. When the TIMER starts its next preset program, all the manually changed settings will be cancelled.

While the 24 hour TIMER is on, it is possible to use the DRYER MODE — regardless of the current device status and the set program, the device will start operating at the DRYER MODE settings. When the DRYER MODE ends, the device returns to the 24 hour TIMER mode. (refer to DRYER MODE section).
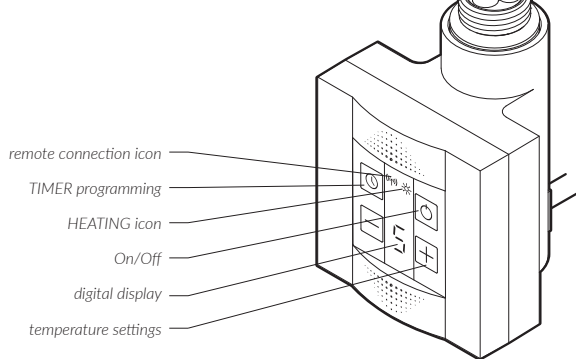
Anti-freeze mode

When the device is switched off with ⏻ button (or when in 24 hour TIMER mode) and remains connected to the mains, it will switch itself back on automatically when the ambient temperature falls below 6°C, to prevent the heating agent from freezing. The display unit will show letters 'AF', until the anti-freeze mode finishes, which is when the temperature rises above 6°C.

Problem solving

Problem	Possible cause	Solution
Device is plugged in, LCD display is empty.	Problem with the connection.	Check the power wire connection, plug and the socket.
Device does not heat, E9 is flashing on the display panel.	Device signals malfunction, temperature sensor has been damaged.	Disconnect the device from its electric supply and wait until the radiator cools down, after that reconnect the device.
Device does not heat, E7 is flashing on the display panel.	Controller has been incorrectly installed on the heating element.	Check if the heating element head is hidden completely. Turn the screw off, press the controller towards the radiator and twist the screw again.
Radiator is cold, E6 is flashing on the display panel.	Device signals malfunction, overheating.	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°. In electric-only version check if the radiator is properly filled with the heating agent.
Radiator is cold, no malfunction signal displayed.	The thermal fuse is damaged.	Disconnect the device completely and reconnect it.
Device is heating although it has been turned off with the ⓞ button.	Electronics damage.	Disconnect the device from its electric supply and wait until the radiator cools down, after that reconnect the device.
If the problem persists, please contact your local distributor.		

KTX 4

remote connection icon

TIMER programming

HEATING icon

On/Off

digital display

temperature settings

Heating element unit heats the radiator that it is installed in and precisely controls its temperature at the same time. Buttons ⊞ and ⊟ are used to regulate temperature whilst the ☀ icon indicates that the radiator is being reheated.

Turning the device on does not mean that it uses the same maximum power for the whole time it is on. On turning the device on, it operates with the nominal power for a short period of time in order to heat up the radiator to the set temperature. After that it turns itself on and off periodically, using only as much energy as it is required to maintain the set temperature of the radiator for current external conditions (see: *Actual working time meter*).

Built in temperature sensor protects the user from getting burnt by limiting the maximum operating temperature to 60°C. Additionally, a thermal fuse, built into the heating rod, protects your radiator from critical overheating (the fuse can get damaged in temperatures higher than 82°C — this is especially important for heating elements installed in dual fuel radiators, connected to central heating system).

Construction of the heating element unit as well as physical characteristics of the heating agent cause that the bottom pipes (especially the two at the very bottom of the radiator) may have a lower temperature than the remaining parts of the radiator – this is a normal phenomenon.

KTX 4 controller installed on the SPLIT heating element is the basic configuration of this type of heating element unit which allows use of all the basic features of the device (see: *Local mode operation*).

KTX 4 controller can also cooperate with an external wall-mounted transmitter (ie. DTIR type), which adds additional features to the basic set (see: Remote mode operation).

Local mode operation (without IR transmitter)

Heating mode

It is possible to set 5 temperature levels in the local mode. Settings are modified with ⊞ and ⊟ buttons. Possible working levels are as follows: 0 (does not heat) and from 1 to 5, indicating a temperature range from 30 to 60 degrees Celsius. The ☀ icon indicates that the device is heating.

Dryer mode (timer)

⊚ button is used to turn the mode on and set the time after which the device is to be turned off automatically. In order to activate the Dryer Mode:

• press ⊚ button shortly — display panel will show dryer working time of 1H (1 hour),
• every subsequent pressing of the ⊚ button will prolong dryer working time (2-4 hours).

In order to deactivate the Dryer Mode, set the time to 0H (press the ⊚ button a few times) or turn the device off and back on.

While the Dryer Mode is active the number of hours remaining to the end of the program is displayed (a digit and the letter H). During that time:

— to see the set temperature press once any of the ⊞ / ⊟ buttons,
— to change the temperature setting press the ⊞ or ⊟ button a few times,
— press the ⊚ button to modify the time after which the Dryer mode will be terminated.

Actual working time meter

The unique feature measuring the actual working time of the heating element adds up the periods during which the device was using nominal electric power (during standard operation the device regu-

lates the temperature and uses very little power thanks to the fact that it turns itself off for longer periods).

It can be checked at any time how much electricity has been used, ie. during all day's operation. In practice it turns out to be up to a few dozens of percent less!

1. Meter reading:
   Press and hold the 🔘 button — the display panel will show letter E followed by 4 digits separated by a hyphen (actual operating time of the device), ie. E..0..2..-..1..5 means that the device was actually working for 2 hours and 15 minutes from the last time the meter was zeroed.

2. Meter resetting:
   Press and hold the 🔘 button until E 00-00 comes up.

The number displayed on the meter reflects the actual energy consumption, therefore you can measure the actual cost of energy used by multiplying the number on the meter by the nominal heating output of the heating element and the price of electricity (1 kW).

Setting permanent local mode

The device has been designed to work in a set, therefore, it will start searching for an IR transmitter signal immediately after being turned on ((•) icon will start flashing). If the device does not find an active IR transmitter, the diode will keep flashing. In order to turn it off, press and hold the 🔘 button until the diode stops flashing which will mean that the controller is no longer searching for the IR transmitter and will keep working in the local mode only. In order to go back to work with IR transmitter, press and hold the 🔘 button.

Remote mode operation (with IR transmitter)

Controller should start searching for an IR transmitter signal immediately after it has been turned on – this is indicated by (•) icon flashing on the display panel. Should this not happen, press and hold the 🔘 button until the (•) icon starts flashing. After being connected, the (•) icon will stay on and a dash will appear.

When working in the remote mode, buttons ⊞ and ⊟ are not active (except when using the *Dryer Mode*). Button 🔘:

- press it short to turn the device off
- press and hold to switch to the *Local Mode*.

Dryer mode (timer)

Dryer in the *Remote Mode* is operated in exactly the same way as in the *Local Mode*, meaning that it is operated via the KTX 4 controller:

- press ⊠ button to activate the *Dryer*
- press ⊠ button a few times to modify *Dryer* operating time
- press ⊞ ⊟ buttons to set the required temperature level during Dryer operation (see: *Local Mode* operation — *Dryer Mode*).

The controller will automatically switch to the *Remote Mode* on expiry of the set time.

Use of the remote transmitter

Detailed description of the basic and advanced features of the IR transmitter depends on a given type (please see user manual attached to your IR transmitter). Examples of features of an IR transmitter — type DTIR1:

- control of temperature inside the room (in *Local Mode* the device controls the temperature of the radiator)
- possibility to program two temperature settings: *Comfort* and *Economical* and easy switch from one to the other
- automatic temperature adjustment program for *Comfort* and *Economical* setting during a 24 hour period (24-hour timer)
- automatic dryer program

- automatic ***Anti-freeze*** program with possibility to adjust the operation threshold
- possibility to adjust the temperature sensor according to the specific conditions of a given interior (calibration feature).

No signal detection (automatic feature)

The transmitter sends a controlling signal every 10 minutes in order to check the quality of communication between the two devices. Interruption or lack of 3 subsequent signals (30 minutes) will result in automatic changeover of the KTX 4 controller to the *Local Mode* with the '0' setting. The controller will wait for communication to resume (display panel will show '0' and ⊛ icon will start flashing). Having received the controlling signal, the device will automatically return to remote operation.

Anti-freeze mode

In case the device is off (switched off with button ⧉) but remains connected to the mains and the ambient temperature falls below 6°C, the device will switch itself on to prevent heating agent in a radiator from freezing. An 'F' letter will blink on the display unit until the anti-freeze mode finishes, which is when the temperature rises above 6°C.

Problem solving

Problem	Possible cause	Solution
Device is connected to electricity, LED display panel is empty	Connection problem	Check the power wire connection, plug and the socket
Heating element does not heat, LED display panel shows E2 code	Device signals malfunction, overheating possible.	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°. In electric-only version check, if the radiator is properly filled with the heating agent.
Heating element does not heat, LED display panel shows E1 code	Controller is incorrectly installed on the heating element	Check if the head of the heating element is completely hidden. Release the screw at the back of the controller casing, gently push the controller towards the radiator and secure the casing back

Problem	Possible cause	Solution
Short, single flashes of the dash on the display panel (in remote mode)	Flashes indicate receipt of controlling signal from the IR transmitter	Controller is working properly.
Device automatically switched from remote to local mode	Communication problem: sensor is inaccessible or the devices have been incorrectly set against each other	Remove any objects that may be disrupting communication between the two devices or mount the IR transmitter in a different location
Heating element is heating despite being turned off with the ⏻ button	Electronics damage	Disconnect the device from its electric supply, wait for the radiator to cool down and turn it back on.
If the problem persists, please contact your local distributor		