

## EUROSTER 4040

Wired, programmable room thermostat for all types of heating and air-conditioning devices.

**MANUFACTURER: P.H.P.U. AS, Chumiętki 4, 63-840 Krobia, Poland**

In order to take full advantage of thermostat capabilities please read this installation and operation manual carefully.

This manual is intended for 08.03.2019 version of thermostat

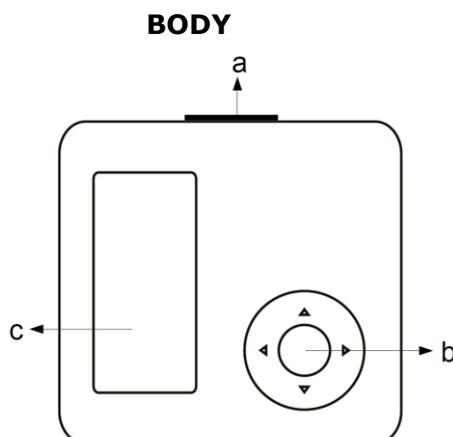
### 1. THERMOSTAT APPLICATION

**Euroster 4040** is a state-of-the-art thermostat designed to control temperature in living and utility rooms. It is used to control the operation of CH boiler and other heating system components. It controls electrical equipment, floor heating and air-conditioning systems. Sensors used in **Euroster 4040** enable temperature read-out and programming accuracy of 0.1 °C. The thermostat operates with two temperature levels: comfort (day) temperature and economical (night) temperature. Each temperature is modifiable within the range of 5 °C...35 °C. The thermostat is programmable in seven-day cycles with an accuracy of 0.5 hour, therefore it enables 48 temperature changes in 24 hours. It is possible to program different time ranges for each day of the week.

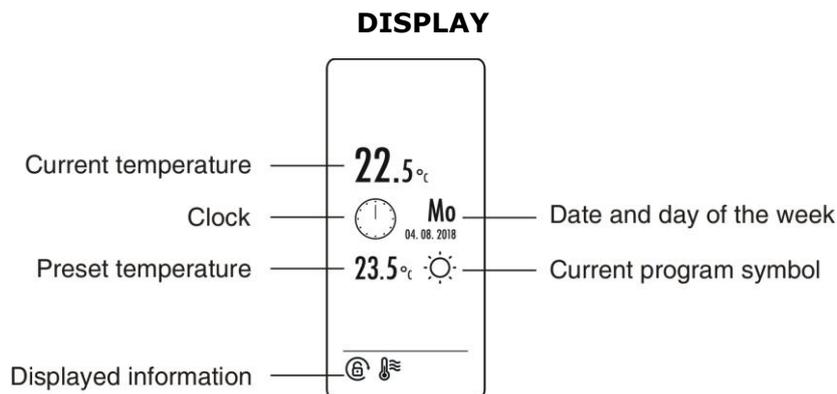
### 2. BASIC THERMOSTAT FUNCTIONS

- User-friendly thermostat enabling easy control of temperature in living and utility rooms
- Clear, back-lit E Ink display
- Two temperature levels: comfort and reduced
- Operation in one of the three following operation modes:
  - room temperature control
  - floor temperature control
  - room temperature control with floor temperature limitation
- 0.5-hour accuracy of range programming
- Simultaneous display of current and preset temperature value
- Thermostat interlock with a selectable 4-digit code
- Numerous useful functions: temporary temperature setting, constant temperature, vacation mode, discharged batteries indication
- Temperature read-out accuracy of 0.1 °C
- Possibility to switch the thermostat off with an active frost protection temperature after the heating season
- Temperature reading correction
- Surface mounting

### 3. THERMOSTAT VISIBLE ELEMENTS



- a. Operation mode switch:
  - In thermostat heating mode it switches the thermostat on and off
  - In thermostat cooling mode it switches between heating and cooling operation
- b. Thermostat control knob
- c. Display



#### 4. ERROR INDICATION

5.  – no sensor, sensor short-circuit or damage
6.  – discharged batteries icon

#### 7. INSTALLATION

##### 7.1. Safety rules

###### ATTENTION!

- **Prior to the commencement of any installation works read this manual carefully!**
- **Prior to mounting or dismantling the thermostat make sure that the heating system is de-energized.**
- **Voltages hazardous to life may be present on thermostat output cables (power supply phase voltage), therefore only qualified technicians may install the thermostat!**
- **The electric connections performed and cables used shall be adequate to the applied loads and must conform to all requirements!**
- **Do not install the thermostat in rooms with increased humidity; protect it against water and other liquids!**
- **Do not install any thermostat showing signs of mechanical damage!**
- **The thermostat is not a safety component. Additional protection devices must be used in systems prone to the risk of damage due to the failure of control systems!**
- **The device is not intended for use by children!**
- **Should there be any problem with proper operation of the thermostat, please contact your technician or the manufacturer!**

##### 7.2. Proper place of installation

The thermostat is designed for indoor mounting at the height of approximately 1.5 m above the floor. Avoid places with strong sunlight, near heating or cooling devices, situated near doors, windows and other similar locations, where temperature measurement could be easily disturbed by external conditions. Avoid places with poor air circulation, e.g. behind furniture. Avoid moist places due to the negative effect of moisture on the service life of device.

##### 7.3. Thermostat installation

The thermostat housing consists of two parts – a base (gray) with connectors for cables and a front panel with a display. Thermostat components are joined together by connectors and clips. In order to separate the thermostat components, hold the top and bottom part of the base and use force to pull the base apart.

Prior to mounting the thermostat lead all necessary cables. Connect the thermostat using a wire with a diameter adequate to the switched load. Mounting holes of the thermostat enable installation in standard Ø60 mm flush-mount back boxes or directly on walls using screw anchors. Unscrew the connector compartment cover, put the cables through the opening, fix the thermostat base on the wall in possibly most horizontal position and tighten the cables. Having finished the installation, check the correct connection of the cables. Retighten the joint cover.

### 7.4. Insertion and replacement of batteries

Place the batteries in the thermostat while observing the correct polarity. There are installation markings in the battery compartment. Then install (snap) the thermostat onto the base.

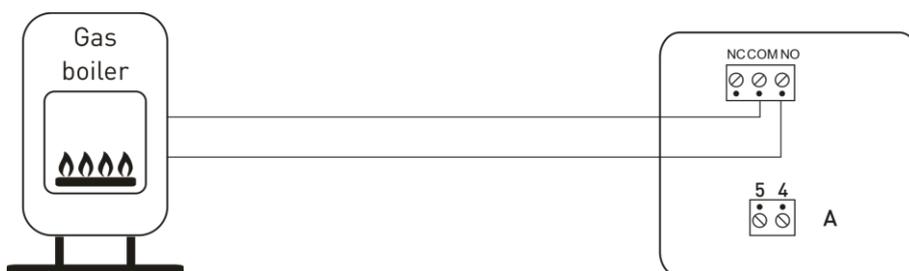
**ATTENTION! Use only alkaline AAA batteries to power the thermostat. Do not use rechargeable batteries because their voltage is lower and their effective time is shorter.**

**It is recommended to replace batteries before each heating season.**

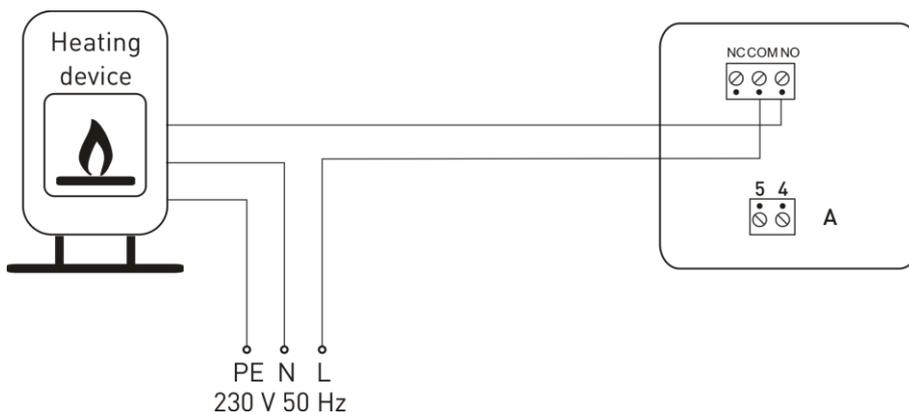
### 7.5. Sample Connection Diagrams

The following diagrams are simplified and do not cover all elements necessary for the correct installation.

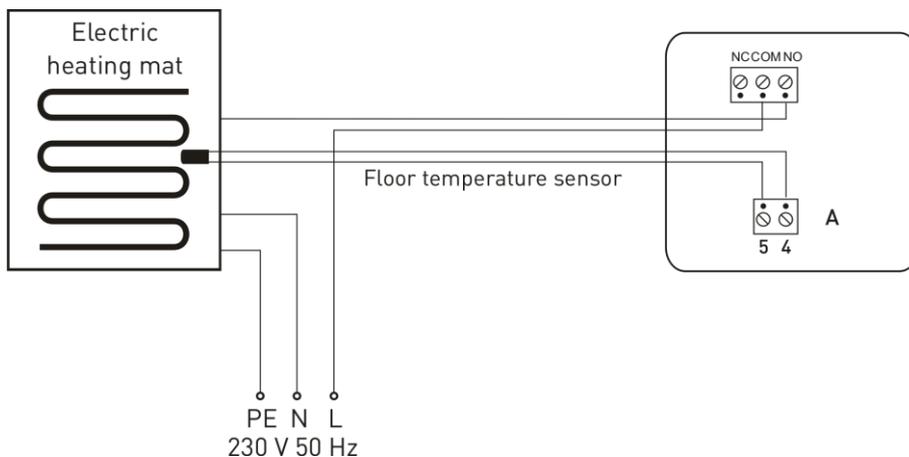
#### In a system with a gas boiler



#### In a heating system



#### In a floor heating system



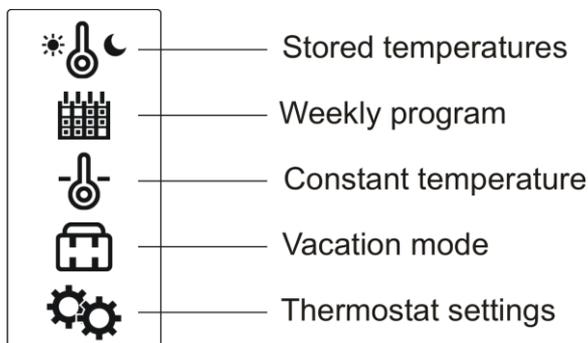
### 7.6. Floor temperature sensor connection

Screw the floor temperature sensor to terminals No. 4 and 5 of "A" connector according to the above sketch. It is not necessary to observe cable polarization.

**ATTENTION! The floor temperature sensor is not included in the basic kit. Please order it separately.**

### 8. USER SETTINGS

In this mode you may set basic parameters and select functions. Enter settings by pressing the central button. Use ▲▼ buttons to select the item you want to modify and press the central button again, then introduce changes and press ◀ to exit the menu. The introduced changes are stored.



#### 8.1. Temperature level modification

Two temperature levels are available in the thermostat: comfort temperature and economical temperature. These temperatures apply for all days of the week. Temperature values may be changed freely within the range of 5 °C...35 °C (in cabled sensor mode: 5 °C...85 °C). Factory settings are the following: comfort temperature 21 °C, economical temperature 20 °C.

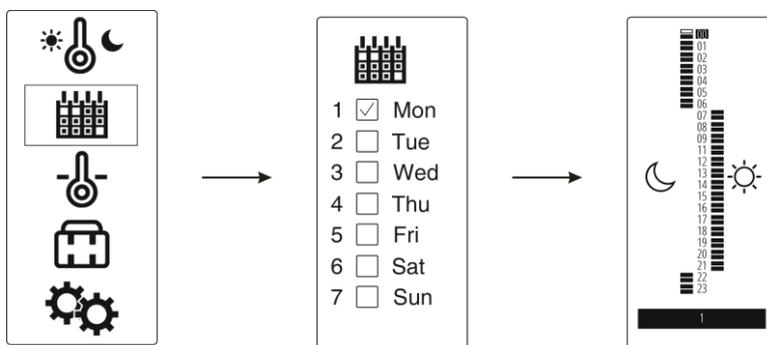
In order to modify the temperature, go to menu, select ☀🌙 item, and use the central button to select the temperature to be modified. Use ▲▼ buttons to set the desired temperature. The longer the button remains pressed, the quicker the values change. Exit the menu by pressing ◀ or holding it for a few seconds.

#### 8.2. Weekly program

Separate time period is provided for each day of the week. Select 📅 item in the menu. Abbreviated names of weekdays are displayed. Use the central button to tick a day or individual days to be modified (if identical program is to be set for them). Use the right button to enter the time period.

Use the left button to set the time period for economical temperature and the right button to set the time period for comfort temperature. Whenever you press a button the temperature is programmed with a 0.5-hour period.

Use ▲▼ buttons to change only the time period of the range without changing the schedule, e.g. if it is necessary to correct the program. Confirm the introduced modifications with the central button. Exit the menu by pressing ◀ or holding it for a few seconds.



#### 8.3. Manual (one-off) temperature modification

Manual override function enables a temporary change of temperature without introducing changes in a program. The thermostat will operate according to the new temperature setting over the period of the current program. With the beginning of the subsequent program the manual override is completed and the thermostat restores operation according to programmed temperatures.

In order to activate manual override, set the desired temperature using ▲▼ ▲▼ buttons. At this point manual override icon 🖱️ is displayed. In order to finish the manual override earlier

press .

#### 8.4. Temperature maintenance – constant temperature

The thermostat maintains the preset temperature regardless of the preset weekly program. In order to activate temperature maintenance, go to menu and select . Use   buttons to set the desired temperature. Confirm the entered temperature with the central button. Constant temperature icon is displayed. At this point the thermostat starts operating in constant set point mode. In order to restore operation according to weekly program, switch off the constant temperature function.

#### 8.5. Vacation mode

Maintenance for a vacation period is used to set a desired temperature for the time of being away on vacation. It will allow you to significantly reduce heating system energy consumption.

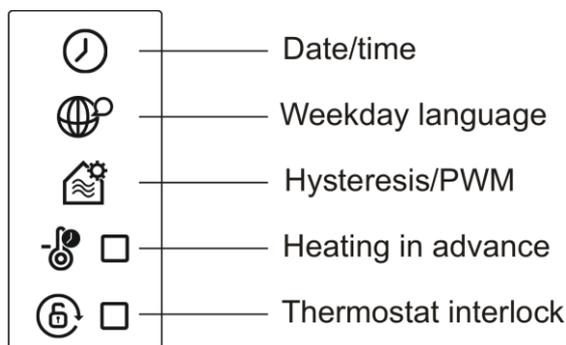
In order to switch to vacation mode, go to menu and select . Use   buttons to set:

- the year when the vacation commences; confirm it with the central button
- the month and day when the vacation commences; confirm it with the central button
- the hour when the vacation commences; confirm it with the central button
- the year when the vacation ends; confirm it with the central button
- the month and day when the vacation ends; confirm it with the central button
- the hour when the vacation ends; confirm it with the central button
- the temperature applicable throughout the entire vacation mode period.

Confirm the settings with the central button. Upon commencement this mode vacation mode icon  is displayed.

#### 8.6. THERMOSTAT SETTINGS

In this menu you may change and select the following functions:



- **Date/time**

The date setting sequence is year > month > day. Using   buttons select a year. Confirm it with the central button. Set a month and day.

Follow the same procedure to set hours and minutes.

- **Weekday language**

Thermostat may display weekdays in Polish, English or using universal symbols, where 1 stands for Monday, 2 for Tuesday, etc.

- **Hysteresis/PWM**

Two operational options of activating the heating (cooling) algorithm are available: hysteresis or PWM.

In the case of hysteresis the device is activated based only on a difference between the preset and current temperature. In order to set hysteresis, go to menu and select , then select .

Use   buttons to change the hysteresis value (the range is 0.2 °C... 10 °C; the factory setting is: 0.2 °C).

PWM ()<sup>PWM</sup>, is a more advanced method to achieve the preset temperature. It is suited for systems with underfloor water heating. It is used to limit room temperature fluctuations. Unlike in on/off controls the current status of transmitter depends not only on the current difference between the preset and measured temperature, but also on the past changes of temperature. For example, if the measured temperature is lower than

the preset temperature for a long time period, the thermostat switches the heating device permanently on. To activate this function, it is necessary to set three additional operation parameters:

- ✓ CPH – maximum number of cycles per hour (3-10). The thermostat calculates the number of switch-ons and switch-offs (cycles) per hour (according to temperature changes).
- ✓ CON – cycle duration period (2-10). It is the minimum period (minutes) for which the thermostat switches the transmitter on each time.
- ✓ PB – control band width (0.5 °C...3 °C). If the difference between the preset and measured temperature is included in proportional control band, then the thermostat selects the switch-on and switch-off times. Outside of this band the output is in continuous on or off operation.

- **Heating in advance**

Activating this function results in switching the heating on earlier in order to obtain the preset temperature at the required time. The time of advance in switching the heating on is calculated with an advanced algorithm, taking into account previous room heat-up times and the current temperature read-out. It takes the thermostat several days to calculate times for various temperatures correctly. To activate this function, go to thermostat menu and select .

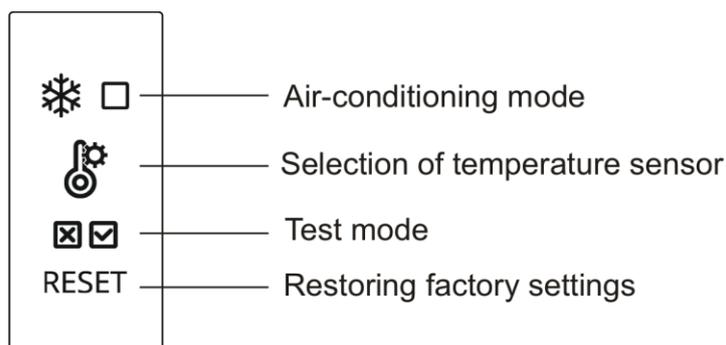
- **Thermostat interlock**

The thermostat features a setting interlock function. A four-digit code of your choice may be entered. In such case it is not possible to change the settings. A setting interlock does not affect the thermostat operation. To activate the interlock, go to setting menu and select , then use the keys to enter your code. Active interlock is indicated by displaying  icon. Follow the same steps to unlock the thermostat. This function is not active by default.

## 8.7. SERVICE SETTINGS

Service menu permits thermostat configuration according to the type of system. We suggest that you exercise special prudence when modifying these settings, because inappropriate settings may result in improper functioning of the system or in extreme cases lead to damaging system components.

In order to enter service settings press and hold for 5 seconds two buttons – the central and right button. The window presented below is displayed. Navigate the menu the same way you did in previous windows. The service menu consists of the following elements:



- **Air conditioning**

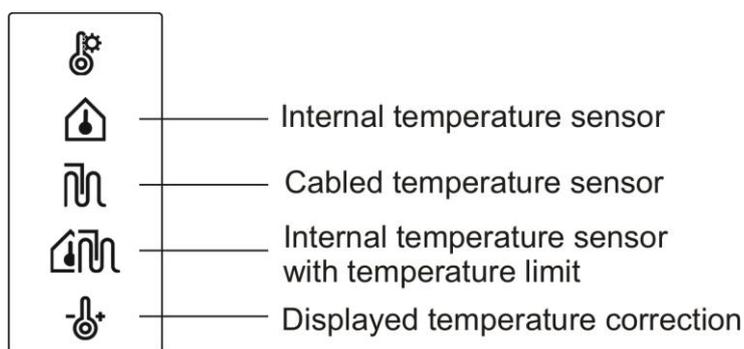
After selecting air-conditioning mode, the device connected to the thermostat will be switched on when the temperature increases above the preset level.

In air-conditioning mode the function of thermostat power switch changes and the switch is used to select between heating and cooling. Activating the air-conditioning operation enables the preset ranges to be replaced with different ones – the ranges stored for cooling. Returning to heating functions restores the previous ranges. This function enables the thermostat to operate with air-conditioning and heating without losing the settings. The icon of switched-on device also changes – .

- **Selection of temperature sensor**

This option permits the selection of temperature sensor to cooperate with the thermostat. There are three operation modes available:

- ✓ the thermostat measures and maintains the temperature based only on internal sensor operation
- ✓ the thermostat measures and maintains the temperature based only on external (cabled) sensor operation
- ✓ the thermostat measures the temperature of both sensors; it maintains the temperature of an internal sensor, and the external sensor acts as a temperature limit. Having selected this operation mode set the floor temperature limit value. This parameter is used to establish the maximum safe floor temperature. When the preset temperature is reached, the device gets switched off.
- ✓ Temperature sensor correction. It is used to adjust the read-out within a range of +/- 5 °C. The function is convenient if the thermostat is located in a slightly warmer or cooler area of the room. Press the central button to introduce a change. Use ▲▼ buttons to set the new value. Confirm with the central button.



#### • Test Mode

In the test mode you may check the main parameters of the thermostat:

- ✓ program version and compilation date
- ✓ relay test
- ✓ internal sensor temperature measurement
- ✓ cabled sensor temperature measurement (if installed)
- ✓ light sensor test

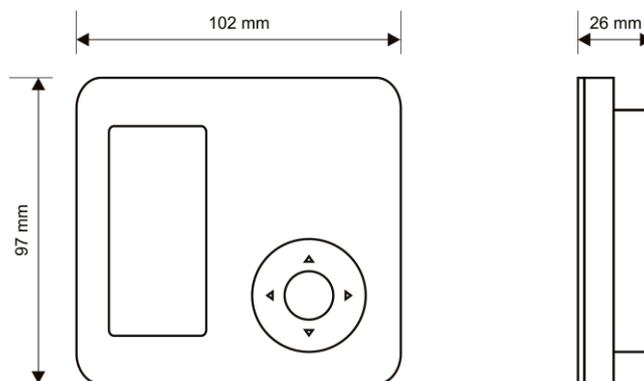
#### • Reset

By selecting and confirming this item you restore the thermostat factory settings.

### 9. MAINTENANCE

Do not use solvents and aggressive detergents to clean the thermostat, since they may damage the surface of the housing and the display. Clean the thermostat housing with a soft cloth.

### 10. DIMENSIONS



### 11. TECHNICAL DATA

Controlled device:	air-conditioning/heating systems
Supply voltage	3V (2 pieces of alkaline AAA batteries)
Thermostat output	relay, voltage-free type, SPDT
Maximum load	5 A 230 V 50 Hz
Temperature measurement range	0 °C...+100°C

Temperature control range	+5 °C...+35 °C / +5 °C... +85 °C in floor measurement mode
Temperature control accuracy	0.1 °C
Temperature read-out accuracy	0.1 °C
Hysteresis range:	0.2 °C... 10 °C with 0.1 °C step of the change or PWM mode
Visual signalization:	backlit E Ink display
Operating temperature	+5 °C...+45 °C
Storage temperature:	-10 °C...+50 °C
Ingress protection rating	IP20
Color	white/gray
Installation method	wall-mounted device
Thermostat weight without batteries	120g
Warranty period	2 years
Thermostat class	IV (PWM mode)
Thermostat contribution to the seasonal energy efficiency of room heating	2% (PWM mode)

## 12. KIT CONTENTS

- **Euroster 4040** thermostat
- 2 pieces of alkaline AAA batteries
- screw anchors
- Installation and Operation Manual with Warranty Certificate

## 13. SIMPLIFIED DECLARATION OF CONFORMITY

P.H.P.U. AS AGNIESZKA SZYMAŃSKA-KACZYŃSKA hereby represents that the type of EUROSTER 4040 equipment conforms to the following directives: 2014/35/EU (LVD), 2014/30/EU (EMC), 2011/65/EU (RoHS).

The complete text of the Declaration of EU conformity is available at the following Internet address: [www.euroster.pl](http://www.euroster.pl)

## 14. ELECTRONIC WASTE MANAGEMENT INFORMATION



This product is designed and manufactured from high quality materials and components suitable for reuse.

The crossed-out wheeie bin symbol located on the product (Fig. 1) means that the product is subject to selective collection in accordance with the provisions of the Directive 2012/19/EU of the European Parliament and of the Council.

The product contains batteries, which are marked with a crossed-out wheeie bin symbol (Fig. 1). The batteries are subject to the selective collection in accordance with the provisions of the Directive 2006/66/EC of the European Parliament and of the Council.

Such marking informs that the electrical and electronic equipment as well as batteries and accumulators may not be disposed of together with other household waste after their service life has ended. The user is obliged to take the used devices and batteries or accumulators to a point of collection of waste electrical and electronic equipment and batteries and accumulators. The entities collecting such equipment, including the local collection points, shops, and municipal entities, set up an appropriate system enabling handover of such equipment and batteries and accumulators. The proper disposal of waste equipment, batteries and accumulators contributes to prevention of consequences hazardous to the health of persons and nature, resulting from the possible presence of hazardous components in the equipment and batteries and from inaccurate storage and processing of such equipment and batteries.

Households play an important role in contributing to reuse and recovery, including recycling, of waste equipment. The attitudes influencing protection of the common good of clean environment are shaped at this level. Households are also one of larger users of small equipment and its rational management at this level impacts the recovery of recyclables. Inaccurate disposal of this product may be penalized in accordance with national legislation.

**WARRANTY CERTIFICATE**  
**EUROSTER 4040 thermostat**

Warranty terms:

1. The warranty is valid for 24 months from the device sale date.
2. The claimed thermostat together with this warranty certificate must be supplied to the seller.
3. Warranty claims shall be processed within 14 business days upon the day when the manufacturer received the claimed device.
4. The device may be repaired exclusively by the manufacturer or by a party clearly authorized by the manufacturer.
5. Warranty becomes void in case of any mechanical damage, incorrect operation and repairs made by unauthorized persons.
6. This consumer warranty does not exclude, restrict nor suspend any right of the buyer if the product does not meet any of the sale contract terms.

.....  
Sale date

Serial number / date of Stamp  
manufacture and signature

Service:  
Phone No. (+48) 65-  
57-12-012

Business entity that issued this Warranty Certificate is:

P.H.P.U. AS Agnieszka Szymbańska-Kaczyńska, Chumiętki 4, 63-840 Krobia, Poland