EUROSTER 4020

Wired, daily room thermostat, for all types of heating 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 the 11.07.2020 version of the thermostat.

1. THERMOSTAT APPLICATION

Euroster 4020 is a user-friendly thermostat designed for controlling the temperature in living and utility rooms within the temperature range of 5 °C...35 °C. It is used to control the operation of the CH boiler and other heating system components. It controls electrical equipment, floor heating, and air-conditioning systems. The sensor used in **Euroster 4020** enables temperature read-out and programming accuracy of 0.1 °C.

2. BASIC THERMOSTAT FUNCTIONS

- Function enabling a temporary decrease of the preset temperature
- Legible, backlit LCD
- Thermostat interlock with a selectable 3-digit code
- Operation in one of the following three operation modes:
  - ✓ Room temperature control mode
  - ✓ Floor temperature control mode
  - ✓ Temperature control with floor temperature limitation mode
- Simultaneous display of current and preset temperature value
- Enables hysteresis setting between 0.2°C and 10°C or PWM adjustment
- Temperature setting and read-out accuracy of 0.1 °C
- Possibility to switch the thermostat off after the heating season
- Discharged batteries indication
- Temperature read-out correction
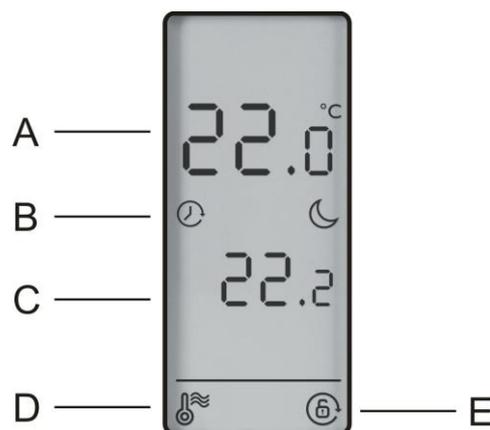- Surface mounting

3. THERMOSTAT VISIBLE ELEMENTS

BODY

a. Thermostat on/off switch
b. Thermostat control knob
c. Display
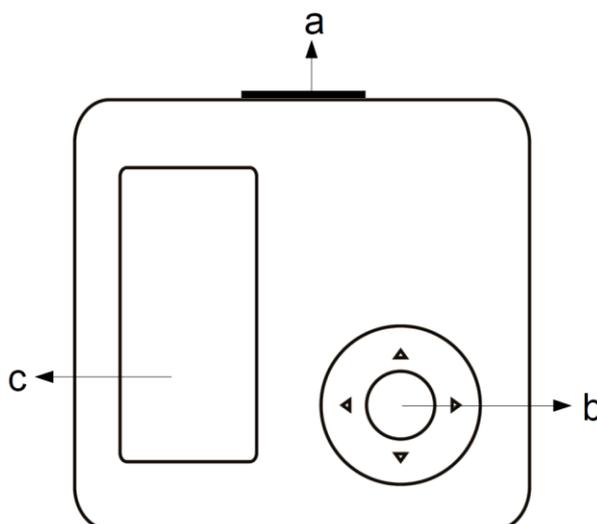
DISPLAY

a. Current temperature
b. Active function enabling the temporary decrease of preset temperature
c. Preset temperature
d. Active heating symbol
e. Active thermostat interlock symbol

4. INSTALLATION

4.1. Safety rules

CAUTION!

- **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!**

4.2. Proper place of installation

The thermostat is designed for indoor installation. In order to ensure fully efficient operation of the thermostat, please make sure that the following recommendations regarding the location of the thermostat are observed:

- Locate the thermostat at the height of approximately 1.5 m above the floor
- Avoid places with strong sunlight, near heating or cooling devices, situated directly by doors, windows, and other similar locations, where the 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 the device.

4.3. Thermostat installation

The thermostat housing consists of two parts – a base (gray) with a cable connector and a front panel with a display. Thermostat components are joined together by a connector and clips. 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 Φ 60 mm outlet 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.

4.4. 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.

CAUTION! 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.
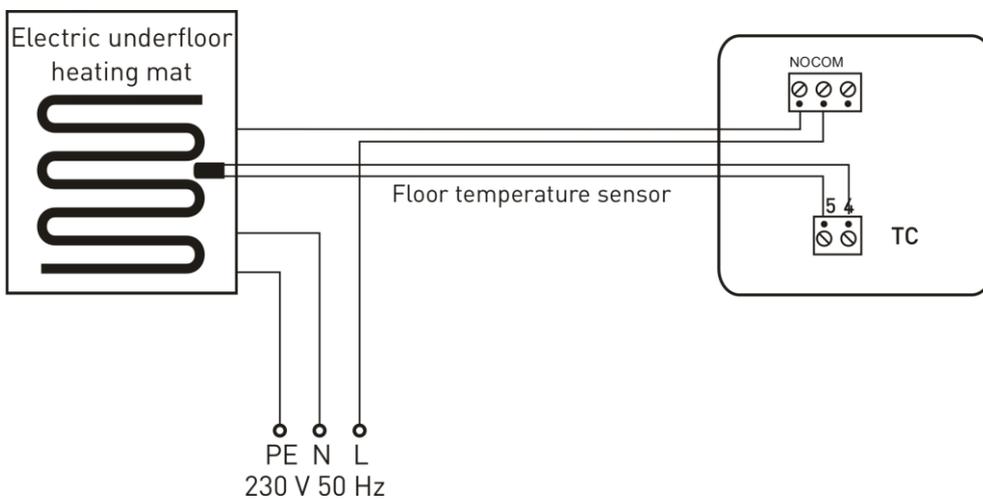
4.5. Sample Connection Diagrams

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

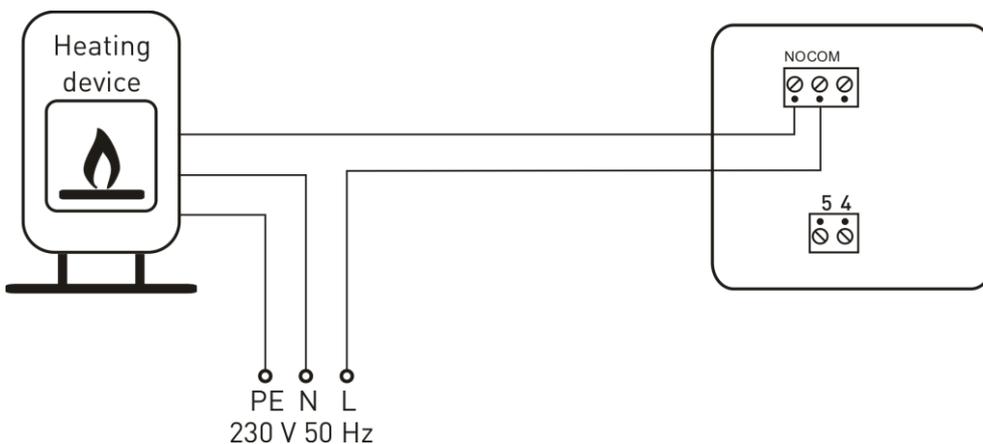**In a system with a gas boiler**
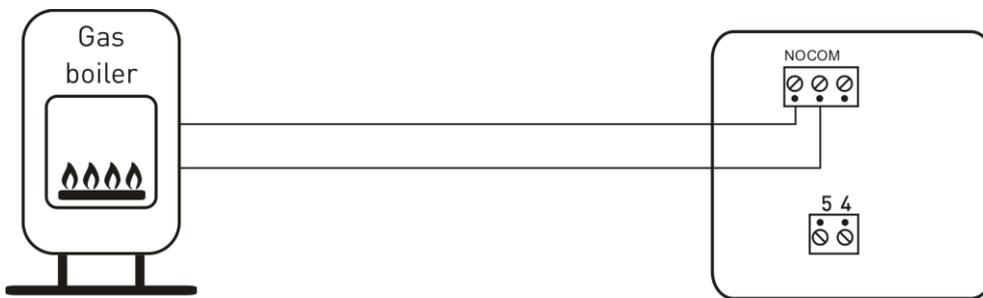
In a 230 V 50 Hz heating system

In a floor heating system

4.6. Floor temperature sensor connection

Screw the floor sensor to the TC connector (terminals no. 4 and 5) according to the above sketch. It is not necessary to keep the cable polarization. After selecting "Sen" 1 or 2 operation mode, the floor sensor connection icon – „〰" appears on the display.

CAUTION! The floor sensor is not included in the basic thermostat kit. Please order it separately.

5.   SETTING TEMPERATURE

Use "▼" and "▲" buttons to set the desired temperature value. Pressing one of the buttons for the first time activates the backlight, pressing it repeatedly lowers or raises the temperature in increments of 0.1°C. The longer the button is pressed, the faster the values change. Confirm the temperature change with the central button or wait until the set value stops flashing and is stored. The factory setting is 20 °C.

6.   FUNCTION ENABLING TEMPORARY DECREASE OF THE PRESET TEMPERATURE (⏱)

It allows you to store the lowered temperature (☾) and its duration and the comfort temperature (☼) that will remain in effect for the remaining time of the day. The preset program will be executed on every day of the week.
To activate the function:
- Use the "▼▲" buttons to set the comfort temperature
- Confirm with the central button
- Press and hold the central button for 3 seconds

- The display shows the flashing value to be used as lowered temperature (☾ symbol),
- Use "▼ ▲" buttons to set the desired temperature value
- Confirm with the central button
- then use the "▼▲" buttons to set the duration of the operation with lowered temperature.
- Confirm with the central button

From this point on, the thermostat runs the program for all days of the week. For the duration of the operation with decreased temperature ☾ symbol is displayed and the ☼ symbol is displayed for the remaining time of day.

In order to change the set temperatures without disabling the function:
- Press the right-hand " ▶" button
- Press the right-hand button again – select comfort ☼ or reduced ☾ temperature
- Use "▼▲" buttons to set the desired temperature value
- confirm with the central button.

In order to disable the function, hold down the central button for 3 seconds.
The function of temporarily lowered temperature can be set to between 1 and 23 hours.

7.   TEMPORARY CHANGE OF TEMPERATURE

During the thermostat operation with the temporarily lowered temperature, use "▼" and "▲" buttons to change temperature. However, the changed temperature value is only valid until the next change resulting from the preset lowering period. For the time of temporary operation with changed temperature "✋" symbol is displayed.

8.   THERMOSTAT CONFIGURATION

Press and hold the central and right buttons for approximately 2 seconds to enter the setting mode. Configure the thermostat in the following way: choose a required parameter with "▼" and "▲" buttons, use the central button to enable the introduction of changes and change the value using "▼" and "▲", then confirm the modified value with the central button. The following parameters may be changed:

- **Temperature range limit – low (LO)**

  This parameter allows you to limit the temperature range to be set. This parameter limits the lower values of the range.
  Default value 5°C.

- **Temperature range limit – high (HI)**

  This parameter allows you to limit the temperature range to be set. This parameter limits the higher values of the range.
  Default value 35°C.

  Example:
  In order to set a preset temperature between 18 °C and 23 °C, you must set the "LO" value to 18 °C and the "HI" value to 23 °C.

- **Hysteresis/PWM (H)**

  Two operational options of activating the heating 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. The parameter determines the accuracy of room temperature control. You may set the hysteresis between 0.2 °C and 10 °C, and the factory setting is 0.4 °C.
  Setting the value to 0.0 will put the thermostat into PWM mode.
  PWM 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 the transmitter depends not only on the current difference between the preset and measured temperature but also on the past changes of temperature. PWM operates with fixed parameters:
    - ✓ Minimum relay activation time of 3 minutes,
    - ✓ Number of cycles per hour - 4
    - ✓ Operating range of the PWM algorithm of 0.7 °C.

- **Thermostat interlock (Pin)**

  The thermostat features a keypad lock function. A three-digit code of your choice may be entered. In such a case it is not possible to change the settings. The interlock does not affect the thermostat operation. To activate the interlock, change "**OFF**" to "**On**", in the menu, confirm with the central button, then enter the code using the "▲▼" buttons.

  Confirm each digit with the central button. Active interlock is indicated by displaying 🔒 icon. The interlock is active after 10 minutes. The interlock is disabled in the same way. This function is not active by default.

- **Temperature sensor correction (C)**

  It is a value added to or subtracted from the measured temperature value. It adjusts the displayed temperature within the range of +/- 5 °C. The function is convenient if the thermostat is located in a slightly warmer or cooler area of the room.

- **Heating / Cooling (t)**
  Select whether the thermostat operates in heating — "🌡≈" symbol or cooling "🌡✳" symbol mode.
  In the cooling mode, the device connected to the thermostat will be switched on when the temperature increases above the preset level.

- **Selection of temperature sensor (Sen)**

  This option permits the selection of a temperature sensor to cooperate with the thermostat. There are three operation modes available:
    - ✓ **0**– the thermostat measures and maintains the temperature based only on internal sensor operation
    - ✓ **1** – the thermostat measures and maintains the temperature based only on external (cabled) sensor operation
    - ✓ **2** – 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 heating gets switched off.

- **Reset (rEs)**

  When you change the value from 0 to 1, the thermostat restores factory settings.

- **Exit (ESC)**

  Press the central button to make the thermostat exit the service mode.
  You may also exit the menu by pressing the left "◀" button.

9. TEST MODE (tSt)

In the test mode, you may check the main parameters of the thermostat. To enter the test mode press and hold the central and "◀" button for approximately 2 seconds.
The following tests are available:
- internal sensor temperature measurement
- external sensor temperature measurement - press the central button,
- relay test - press the lower "▼" button repeatedly to switch the relay on/off,
- backlight test – press the upper "▲" button repeatedly to switch the backlight on/off.

10. SWITCHING THE THERMOSTAT OFF

When the switch is moved, the thermostat goes into the frost protection mode. ⏻ icon appears on the display. Frost protection ensures that the heating is turned on only to prevent temperature dropping below 4°C.

11. ERROR INDICATION

OP – sensor missing or damaged

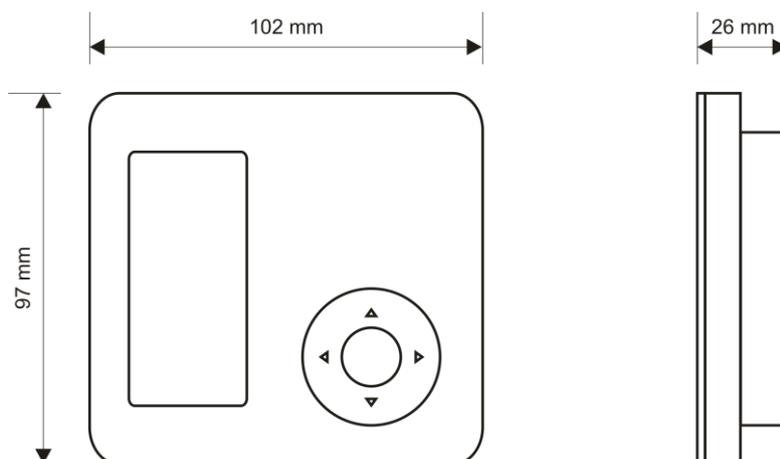**SH** – short-circuit of sensor or a damaged sensor

Err 1 – internal error– remove and after a few moments reinstall the batteries.

🔋 – discharged batteries icon.

12. 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.

13. DIMENSIONS

14. TECHNICAL DATA

Controlled device	air-conditioning / heating systems
Supply voltage	3 V (2 pieces of AAA batteries)
Thermostat output	relay, voltage-free type, SPST (normally open)
Maximum load	5 A 230 V 50 Hz
Temperature measurement range	0 °C...+99°C
Temperature control range	+5 °C...+35 °C
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 LCD
Operating temperature	+5 °C...+45 °C
Storage temperature:	0°C...+50°C
Ingress protection rating	IP20
Color	white/gray
Installation method	wall mount, flush back box Φ 60 mm or screw anchors
Thermostat weight without batteries	125g
Warranty period	2 years
Thermostat class	IV
Thermostat contribution to the seasonal energy efficiency of room heating	2 % (PWM mode)

15. KIT CONTENTS

- **Euroster 4020** thermostat
- 2 pieces of AAA batteries
- screw anchors
- Installation and Operation Manual with Warranty Certificate

16. SIMPLIFIED DECLARATION OF CONFORMITY

P.H.P.U. AS AGNIESZKA SZYMAŃSKA-KACZYŃSKA hereby represents that the type of EUROSTER 4020 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**

17. ELECTRONIC WASTE MANAGEMENT INFORMATION

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

The crossed-out wheelie 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 wheelie bin symbol (Fig. 1). The batteries are subject to 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 the 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, batteries, and accumulators.

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

WARRANTY CERTIFICATE

EUROSTER 4020 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 from the date the manufacturer has received the claimed device.
4. The device may be repaired exclusively by the manufacturer or by other parties 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 ensuing if the product would not meet any of the sale contract terms.

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| Sale date | serial number/date of manufacture | Stamp and signature | Service: Phone No. 65-57-12-12 |

A business entity that issued this warranty certificate is:
P.H.P.U. AS Agnieszka Szymańska-Kaczyńska, Chumiętki 4, 63-840 Krobia, Poland