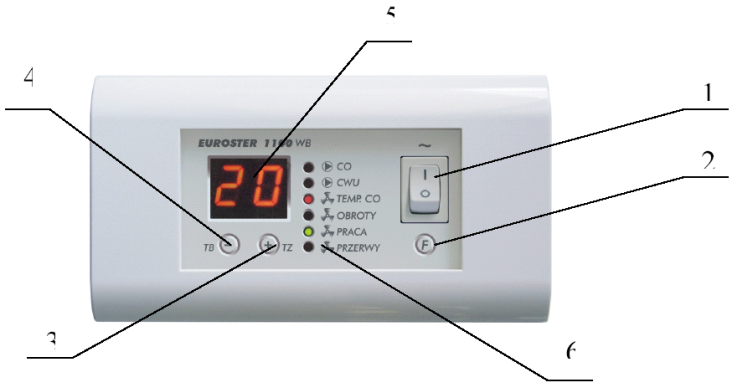
EUROSTER 1100WB

1. FUNCTION

Euroster 1100WB is a modern controller to be used in the central heating systems where blowing boiler powered by solid fuel. A basic function of the controller is to optimise the combustion process by a series of settings and modifications. It has inputs for controlling a circulating pump and a blower as well as an option for connecting a room regulator.

EUROSTER 1100WB is equipped with ANTI STOP system that prevents seizure of the pump rotor in the idle periods. Throughout the non-heating season the controller EUROSTER 1100WB automatically cycles the pumps for 30 seconds. For this function to be operational, the controller must not be switched off at the end of the heating season.

2. APPEARANCE



1. On/off mains switch
2. Function key
3. External temperature reading switch, up (+)
4. DHW cylinder temperature reading switch, down (-)
5. Display
6. Diodes signalling operation and changes of parameters

3. INSTALLATION

DANGER! Prior the installation by a qualified electrician make sure that the unit has been disconnected from power supply to avoid the risk of electric shock, Units with mechanical damage should not be installed.

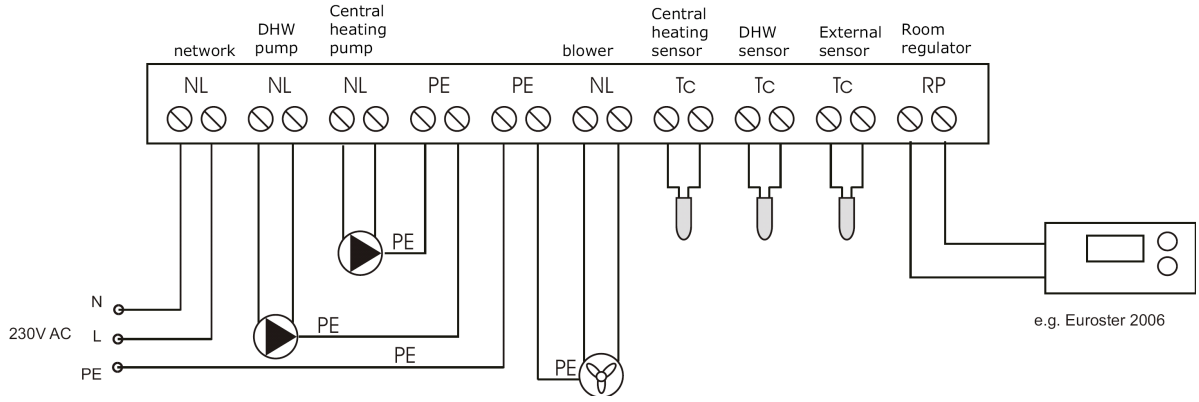
a. mounting of the controller

- the controller should be fixed in a place where the temperature does not exceed 40ºC. Prior the fixing of the controller all necessary cables should be supplied and connected. Fix the controller to the wall with wall plugs (if on the plastered wall) or screw it to the cable box under the plaster (if to be built-on).

b. connection diagram

- the cables should be fixed to connection blocks in accordance with the figure below where the cables are appropriately marked. Namely, neutral cables should be screwed to terminals N, phase cables to terminals L, and protection cables to terminals PE.

- if a room regulator is to be connected, a cramp should be removed from RP connection box and in this place the cables for the room regulator should be connected (recommended cable: 2x0.5).



4. OPERATION AND PROGRAMMING

a. start up of the controller

- set the switch (~) to position I,
- upon energizing all the segments and light emitting diodes of the display light up for 3 seconds and an acoustic signal (buzzer) activates.
- the current temperature of central heating sensor is displayed and the controller switches to the heating mode.

b. description of displayed information

- lack of lit dots on the display – central heating temperature shown
- lit dot after the first digit – DHW temperature shown
- lit dot after the second digit – the external temperature shown
- central heating diode (CO) on – signal of the central heating pump in operation
- DHW diode (CWU) on – signal of the DHW pump in operation
- central heating temperature diode on (TEMP.CO) – signal of the blower in operation
- blinking display and a sequence of light emitting diodes – parameter changing modes

c. change of temperatures central heating and domestic hot water

setting the temperature for central heating pump

- press the function key (F) – the diode signalling the setting for central heating will start blinking.
- set a required temperature buy using switches (+) to increase or (-) to decrease the displayed temperature
- wait ca. 5 seconds until the preset temperature has been stored and they display will return to displaying the current temperature of the central heating sensor

setting the temperature for DHW pump

- press the function key (F) until the diode signalling the setting for DHW will start blinking
- set a required temperature buy using switches (+) to increase or (-) to decrease the displayed temperature
- wait ca. 5 seconds until the preset temperature has been stored and they display will return to displaying the current temperature of the central heating sensor

d. viewing the outside temperature

- in order to display the outside temperature press the switch TZ (+). The display will show the current temperature of the outside temperature sensor (with a dot after the second digit).

e. viewing the temperature of the DHW cylinder

- in order to display the temperature of the cylinder press the switch TB (-). The display will show the current temperature of DHW cylinder sensor (with a dot after the first digit).

f. adjusting the temperature of the blower

setting the temperature of the blower for outside temperature at +10ºC

- press the function key (F) until the diode TEMP CO will start blinking and the display will show the required temperature with a dot after the first digit
- set a required temperature buy using switches (+) to increase or (-) to decrease the displayed temperature
- wait ca. 5 seconds until the preset temperature has been stored and they display will return to displaying the current temperature of the central heating sensor

setting the temperature of the blower for outside temperature at -20ºC

- press the function key (F) until the diode TEMP CO will start blinking and the display will show the required temperature with a dot after the second digit
- set a required temperature buy using switches (+) to increase or (-) to decrease the displayed temperature
- wait ca. 5 seconds until the preset temperature has been stored and they display will return to displaying the current temperature of the central heating sensor

ATTENTION!
Due to the modus operandi of the weather algorithm the preset temperature for -20ºC cannot be set below the temperature below the preset temperature of +10ºC.

g. setting the blower rotations

- press the function key (F) until the diode OBROTY will start blinking. Switches (+) and (–) change the value of the setting code and set a required value of the blower rotations. Blinking digits show a code from 0 to 9 which determines the value of the blower rotations settings in operation. Depending on the needs the force of blowing is determined with the use of this parameter ranging from 0 to 9, where 0 means MAXIMAL and 1 - MINIMAL rotations of the blower.

h. blowing time adjustment

- press the function key (F) until the diode PRACA will start blinking and the display will show a code from 0 to 9 which determines the time value of current setting in accordance with the table below.
- set the cyclic blowing – right switch (extending) or left switch (shortening)
- wait ca. 5 seconds until the setting has been stored and the display will show the current temperature will show the current temperature of the central heating sensor

i. blowing interval adjustment

- press the function key (F) until the diode PRZERWY starts blinking and the display shows a code from 0 to 9 which determines the time value of current setting in accordance with the table below.
- set the blowing interval – right switch (extending) or left switch (shortening)
- wait ca. 5 seconds until the setting has been stored and the display will show the current temperature will show the current temperature of the central heating sensor

CYCLIC BLOWING TIME										
CODE	0	1	2	3	4	5	6	7	8	9
TIME	Off	5s	10s	15s	20s	30s	40s	60s	80s	100s
CYCLIC BLOWING INTERVAL										
CODE	0	1	2	3	4	5	6	7	8	9
TIME	20s	1min	2min	4min	6min	8min	10min	12min	14min	16min

5. OPERATION OF THE CONTROLLER

a. mode: heating and cooling

- E1100WB is equipped with the heating function that is activated by the on/off mains switch. This function is operational just after switching on the controller. The controller checks the temperature of water in the boiler and when due to the heating the temperature of the central heating sensor reaches the preset temperature for the blower (the value preset for +10°C), the heating function will be switched off and the controller will start its operation in accordance with the settings. During the heating mode the controller does not receive information from the external input (room regulator) and does not activate the pumps, whereas the blower operates according to the user's settings. When the temperature in the boiler does not increase above 30ºC for 60 minutes, then the controller will switch off the blower and activate the sound alarm for 20 minutes (the furnace has cooled down). Another increase of temperature will cause the blower to activate (heating) and operate according the user's settings.

b. mode: controlling

- After heating up the boiler the controlling mode starts when the controller operates according to the settings. Central heating pump is activated when the temperature of the central heating sensor reaches the preset temperature. The pump will be switched off if the temperature falls below the value set by 5ºC. Due to activated DHW priority the central heating pump will be operational only when the DHW pump is switched on.

  The blower is activated when the temperature in the boiler decreases below the preset temperature. In case when the temperature of the sensor reaches the preset temperature, then the controller reduces its rotations every second until a compete stop. When the measured temperature is above the preset temperature then the process of cyclic activation of the blower will start in order to blow the furnace. When exceeding the temperature of 85ºC the process of furnace blowing will be inactive and the controller will start the alarm mode, absolutely activate the central heating pump and start the acoustic signal (buzzer).

c. controlling the DHW pump and operation according to the priority

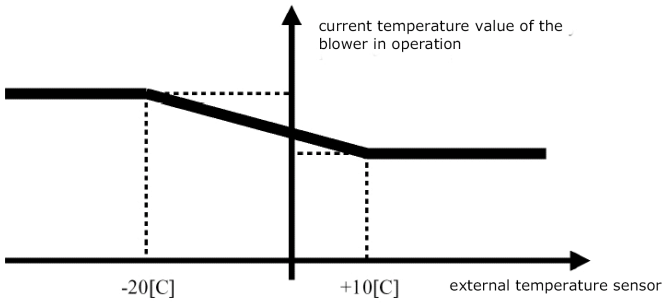
- Euroster 1100WB has a priority of heating DHW with a function of protecting the DHW cylinder against cooling. During heating up the cylinder the controller does not receive information from the room regulator and in this situation it will try to heat the cylinder as soon as possible. Irrespective of other algorithms the blower temperature will be automatically increased by 10ºC above the temperature preset for the DHW pump. The pump is activated if the temperature of the cylinder sensor is below the setting and the central heating temperature is 10ºC above the current temperature of the DHW sensor. If the temperature increases and reaches the preset temperature for the cylinder or when the temperature of central heating sensor is equal or below the current temperature of the DHW sensor, then the pump is switched off.

d. weather controlling

- The algorithm of controlling the blower has two separate setting temperatures (the preset temperature of the blower for the external temperatures of: +10ºC and -20ºC) which are used by the internal room regulator when determining the current temperature of the blower in operation. With the use of these two settings the controller determines the heating curve shown below.

ATTENTION !
In order to switch off the weather regulator, the same values should be set for both settings.

Dependence of the current temperature of blower operation on the temperature outside.



e. room regulator

- The controller is equipped with an input for a room regulator. If the regulator requires heat (shorted contacts), it means that the boiler is to operate and heat up – the central heating pump and the blower operate according to the user's settings in order to maintain the preset temperature. Whereas when there is not need for heat (opened contacts), the controller modifies the settings in order to maintain the boiler temperature at 40ºC. The algorithm of the ventilator operates with the preset temperature of 40ºC, cyclic blowings are active and the central heating pump is activated.

f. operation without the DHW pump

- When a user is not going to use the function of heating the DHW, then in the place of a DHW temperature sensor resistor at a value of 2,2 kΩ (included in the set) should be mounted and set the temperature of the DHW pump at the minimal value (eliminates the DHW priority function).

g. operation during the non-heating season

- In order to switch of the central heating during the non-heating season, the temperature for the central heating pump should be set at 90ºC (above the setting for DHW and the blower) and then only the cylinder will be heated. The temperature set for the blower will be automatically increased by 10ºC above the preset temperature for the DHW pump so that cylinder will be heated as fast as possible.

6. STANDARDS AND CERTIFICATES

The Controller E1100WB is made in compliance with the following EU Directives: EMC, LVD.
The CE certificate of conformity is posted and available on our website:
www.euroster.com.pl

7. DATA SHEET

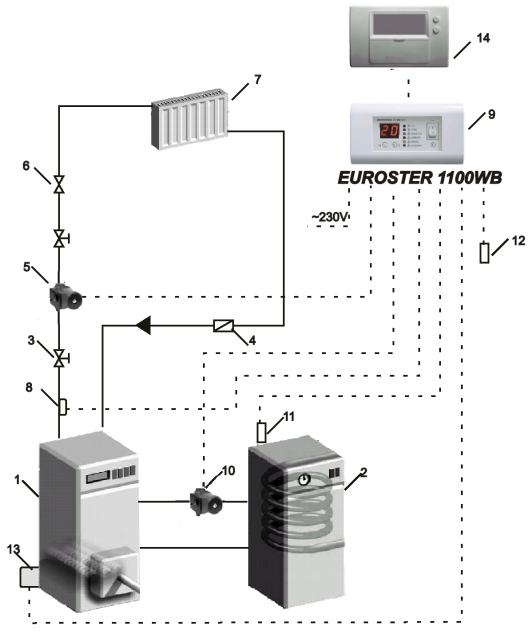
a. temperature setting range for DHW pump:10ºC - 70ºC
b. temperature setting range for central heating pump:10ºC - 90ºC
c. temperature setting range for the blower: 40ºC - 80ºC
d. supply voltage: ~230V
e. maximum power of the blower: 150W
f. maximum loading of the pumps: 6A
g. external temperature measurement: -30ºC to +99ºC
h. central heating and DHW temperature measurement: 0ºC - 99ºC
i. heating hysteresis: 5ºC
j. DHW hysteresis: 3ºC

8. ERROR CODES

a. displayed:
- C2 – incorrectly connected sensor, stoppage
- C1 – incorrectly connected sensor, short circuit
- EE – stored temperature reading error
- dd – internal error

b. acoustic (buzzer):
- emergency situation (error) – quick broken signal
- dangerous temperature of 85ºC reached (central heating) – continuous signal
- furnace cooling – continuous signal for 20 minutes

9. Exemplary wiring diagram

This diagram is simplifies and as such does not show all the components necessary for fully functional operation of the system.

1. Heating boiler
2. Hot water cylinder
3. Shutoff valve
4. Filter screen
5. Central heating pump
6. Check valve
7. Heating unit
8. Central heating temperature sensor
9. Controller
10. Heating water circulating pump
11. DHW temperature sensor
12. External temperature sensor
13. Blower
14. Room regulator