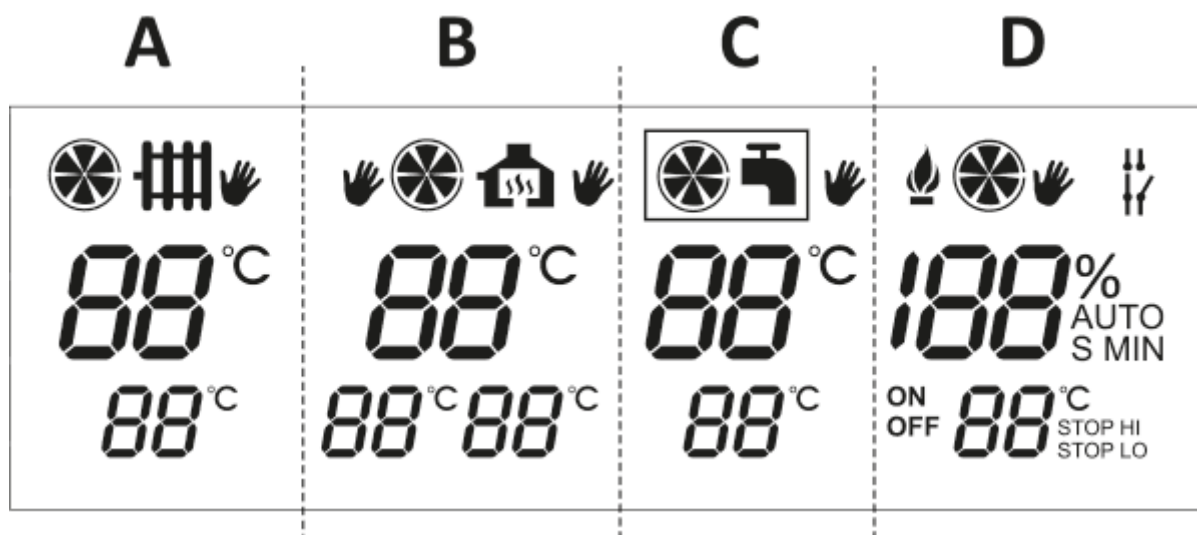# AURATON Ursa

User manual ver. 20211204
The document presents collected information on safety, assembly and use of AURATON Ursa.

Description of the device

AURATON Ursa is an advanced CPU-based controller designed to operate with circulating pumps of district heating ("DH") and domestic hot water ("DHW") systems. The device may be used in thermo fireplaces with water jacket in DH system and in blowing DH furnace fuelled with coal and coal dust.

Display description

Display of the AURATON Ursa controller is divided into four control sections. Each section is responsible for controlling a separate device:

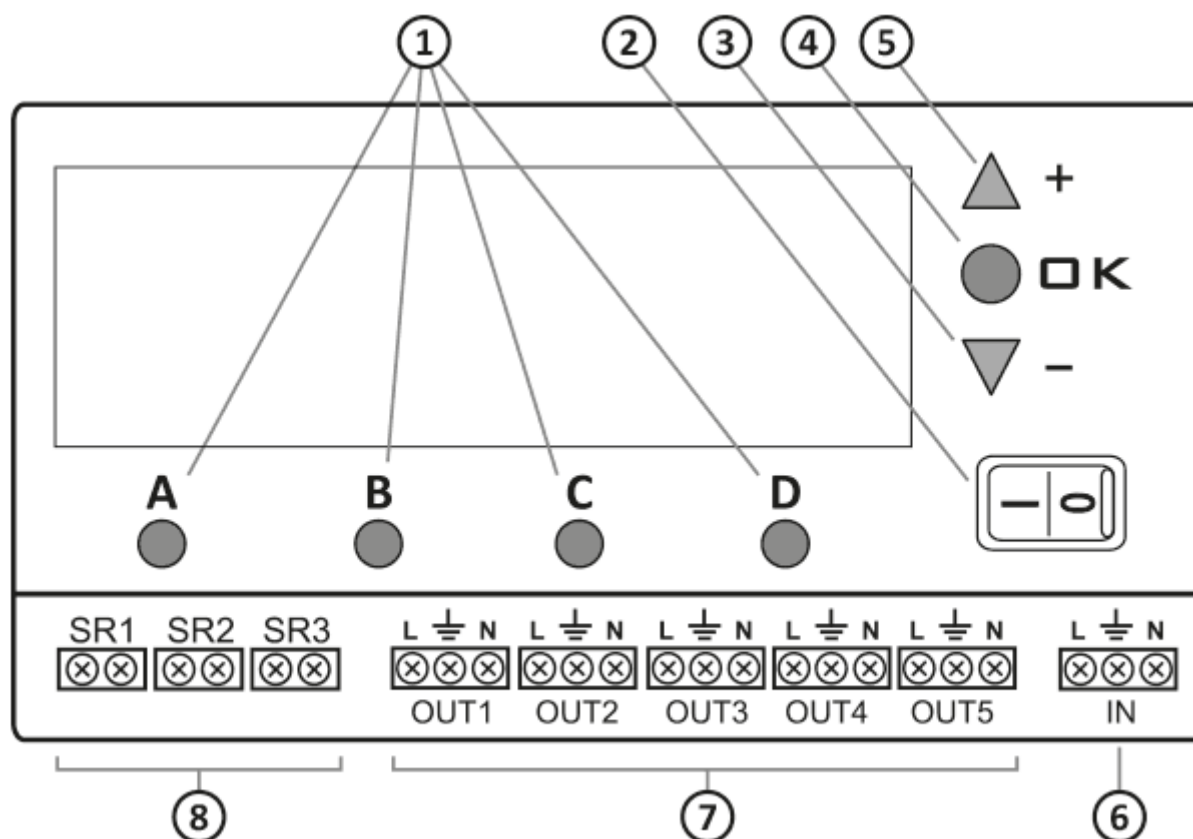|	
Section A	Control of DH pump.
Section B	Control of DH pump with a self-reversing actuator or second DH pump (for thermo fireplace system).
Section C	Control of DHW pump.
Section D	Control of fan (blower).

Description of buttons and connecting terminals

> **NOTE:**
> To access the connecting terminals, remove the front cover.

1. Buttons "A, B, C, D" for individual settings
2. Main power switch
3. Button "-" – decrease of settings
4. Button "OK" – acknowledgment of settings
5. Button "+" – increase of settings
6. Power supply terminals
7. Terminals for connection of working equipment (OUT1-OUT5)
8. Terminals for connection of temperature sensors (SR1-SR3)

General comments

1. Before wiring AURATON Ursa, cut off protective caps.
2. Only one temperature sensor is included in the delivery (with a 2.5 m long cable). For better functionality of AURATON Ursa, purchase additional temperature sensors (option). Upon request, optional sensors may be provided with cables of a length of up-to 15 m.

Operation in DH system

(A-section of the display)
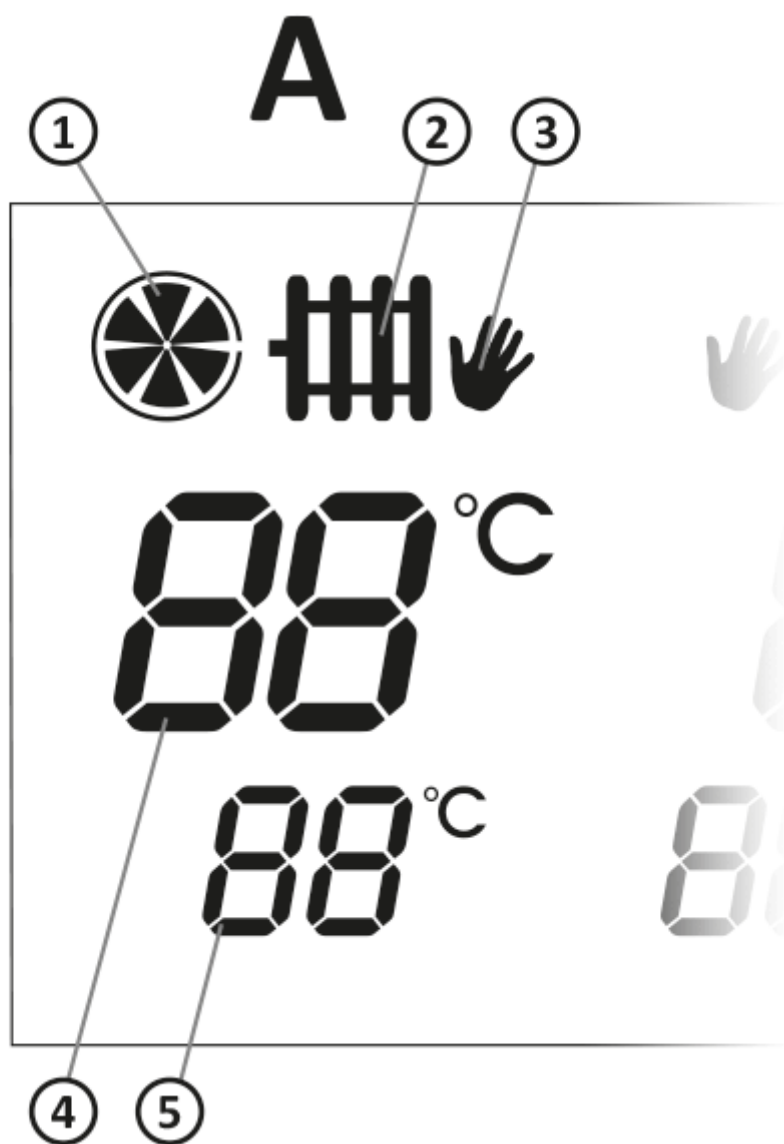
1. Indicator of DH pump operation,
2. Indicator of DH pump sensor,
3. Indicator of active manual mode of operation,
4. Actual temperature of DH sensor SR1,

5. Indicator of set temperature.

The pump & controller unit forces water circulation in DH system equipped with a coal or gas boiler without a separate pump control system. The controller sensor measures water temperature at the inlet of DH system.

In DH system with a coal boiler, the AURATON Ursa switches off the circulating pump once the boiler has been off. Further water pumping when the boiler is off is not recommended, because air draft to the chimney cools down water in the boiler faster than in the radiators. The optimum temperature can be set on the AURATON Ursa display (usually it is approx. 40 °C).

In a DH system with a gas boiler, the temperature shall be lower than the value set on the DH boiler temperature controller. Setting the temperature above dew point prevents the boiler from surface water condensation ("sweating") during heating up of water in DH system.

AURATON Ursa is also equipped with the AntiStop function to prevent seizure of unused pump rotor. In addition, the built-in CPU automatically starts-up the pump for 30 seconds fortnightly after the end of the heating season.
To make the system work after the heating season, leave the AURATON Ursa ON.
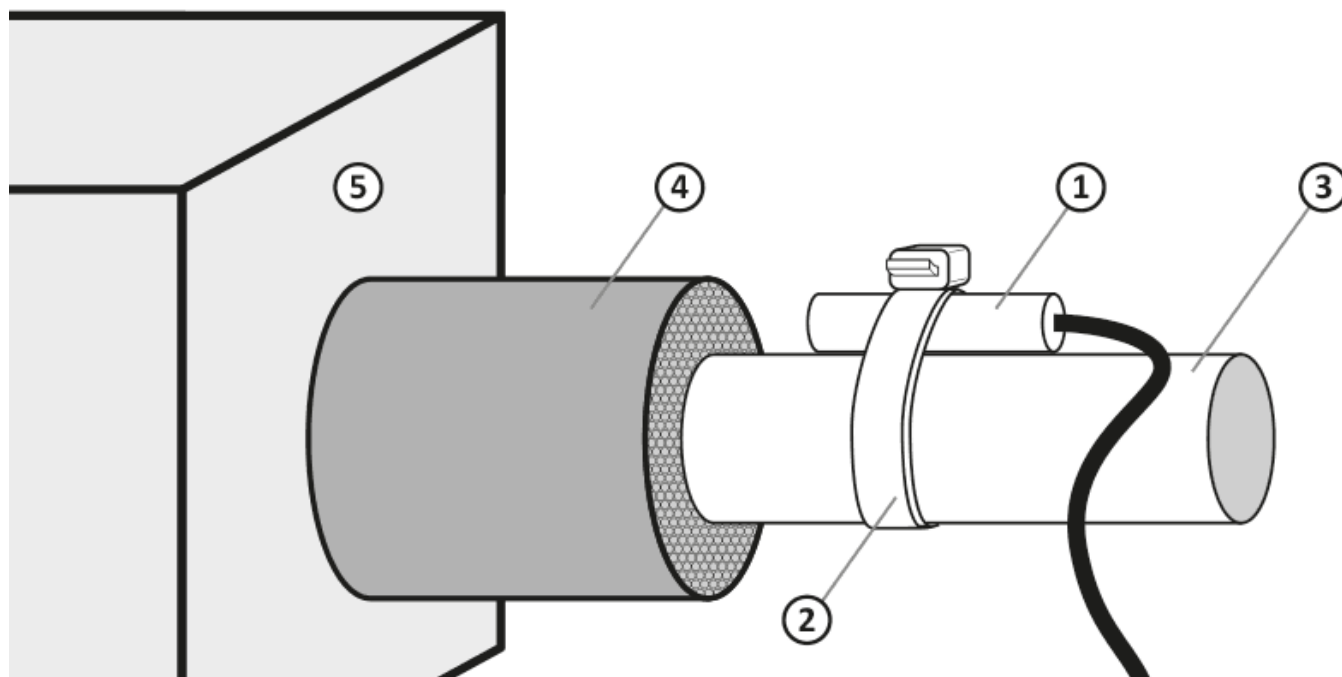
Installation

Mounting AURATON Ursa

Install the AURATON Ursa on a wall or other support using two screws (expansion dowels are included in the delivery). Fasten wires of AURATON Ursa to wall using holders.
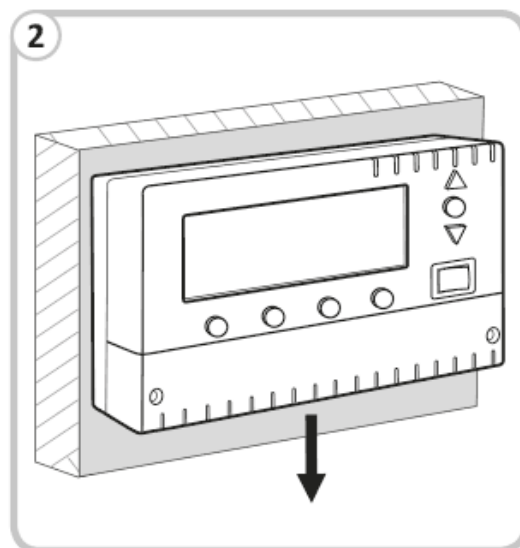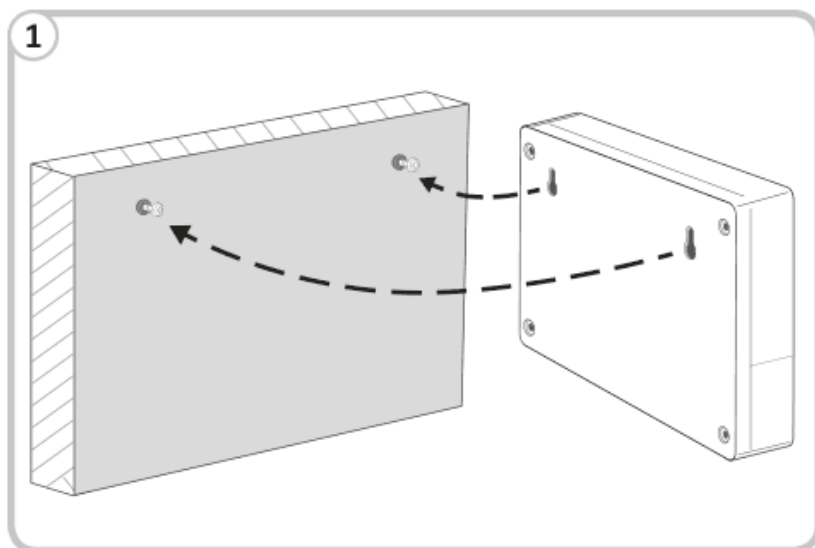
Sensor mounting:

Cut off protective caps before wiring. Connect the temperature sensor to SR1 terminals of AURATON Ursa. Next, mount the sensor to the bare outlet pipe of DH boiler (as close as possible to the boiler).

1. temperature sensor
2. cable tie
3. pipe

4. pipe insulation
5. DH furnace

NOTE:
If the coal and gas boilers work for the common DH system, install and insulate the sensor in the place where both outputs are connected.

Connection of power supply cable to the pump:

Connect the pump to OUT1 terminals of the controller. Pump connection: connect the green or yellow-green (GND or PE) wire to „⏚" terminal, and blue wire to – "N" terminal. Connect the brown wire to "L" terminal.

Checking, whether the connection is correct

Check the cable connection and tighten the cover of pump motor terminal box.

Connection of AURATON Ursa

Protect the wires against accidental breakage and connect the power supply cable to a 230 V AC/50 Hz power outlet with a GND pin.

⚠ **NOTE:**
The ambient temperature in the place of AURATON Ursa operation should not exceed 40 °C.

First start-up

Switching on AURATON Ursa

Turn the ⊟ switch to „**I**" position. Once the device is ON, all display segments go ON and software version is displayed for approx. 2 s followed by the „❋⧓" symbol and actual and set temperature at the sensor (4 and 5, respectively).

Display description

The indicator on the upper part of the display (4) shows the actual temperature at the sensor, while the lower part (5) – the set temperature. Moving rotor blades on the indicator (1) confirm the DH pump is running.

Temperature change

Press „**A**" button under the temperature setting. The digits start blinking and indicate the current set value. Use "+" (increase) or "-" (decrease) button to set the desired temperature value. Confirm the set value within 10 s by pressing the „**OK**" button. Otherwise, new value is not saved and AURATON Ursa returns to the previous setting.

Hysteresis change

Press „**A**" button under the temperature setting. The digits start blinking and indicate the current set value. Press „**A**" button again to display the set hysteresis (**HI**). Use "+" or "-" button to set the required hysteresis between 2 °C and 10 °C (with 2 °C step). Confirm the set value within 10 s by pressing the „**OK**" button. Otherwise, new value is not saved and AURATON Ursa returns to the previous setting.
E.g.: When the set temperature is 40 °C and hysteresis is 4 °C, the pump switches on at 42 °C and off at 38 °C.

Changing the pump's forced operation mode

Press „**A**" button under the temperature setting. The digits start blinking and indicate the current set value. Press „**A**" button again to display the set hysteresis (**HI**). Press „**A**" button again. The value of 85 °C is displayed in the temperature indication box, and the symbol of forced pump operation (⌁) appears on the right side of the display. Use "+" or "-" button to set either the pump's continuous operation (⌁) or its switch off (⌁) when the temperature exceeds 85 °C.

Upon setting the selected mode, confirm it (within 10 seconds) by pressing the "**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

Automatic mode of operation

Upon setting AUTO mode of operation, AURATON Ursa switches the pump on and off depending on the set temperature. In the DH system, the pump turns ON when the temperature in the place where the sensor is located rises above the set value, and turns OFF when the temperature drops below the value set on AURATON Ursa with appropriate application of the set hysteresis.

**Manual mode – Continuous operation**

To switch on the circulating pump manually (regardless of the temperature at the **SR1** (DH) sensor), press and hold down „**A**" button for 3 s.

A hand symbol „✋" (3) appears in the display. To switch off the pump manually – press and hold down „**A**" button for 3 seconds again.

> **NOTE:**
> f only SR1 sensor is connected, the remaining AURATON Ursa functions are disabled – i.e. indications of DH pump operation in the fireplace system and of pump controller in the DHW system are inactive.
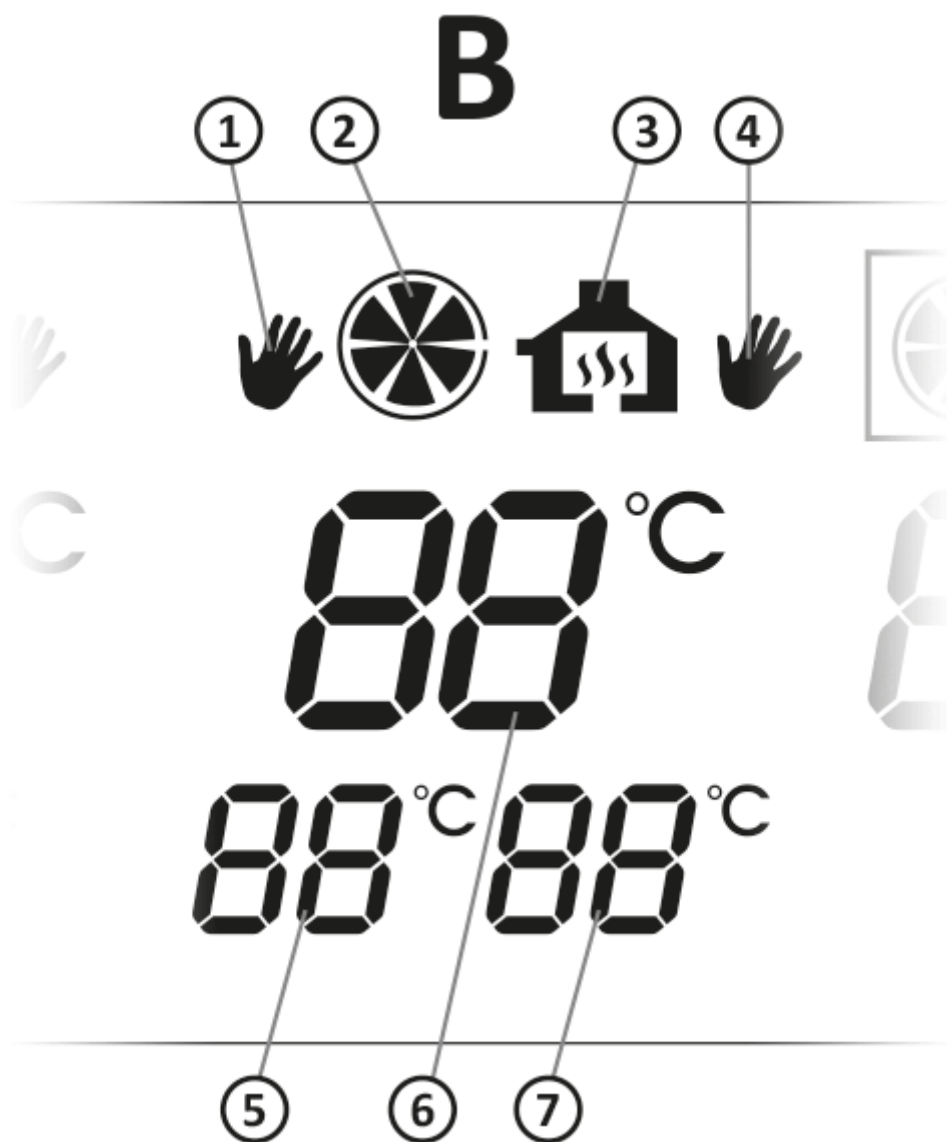
Wiring diagram of pump to DH boiler
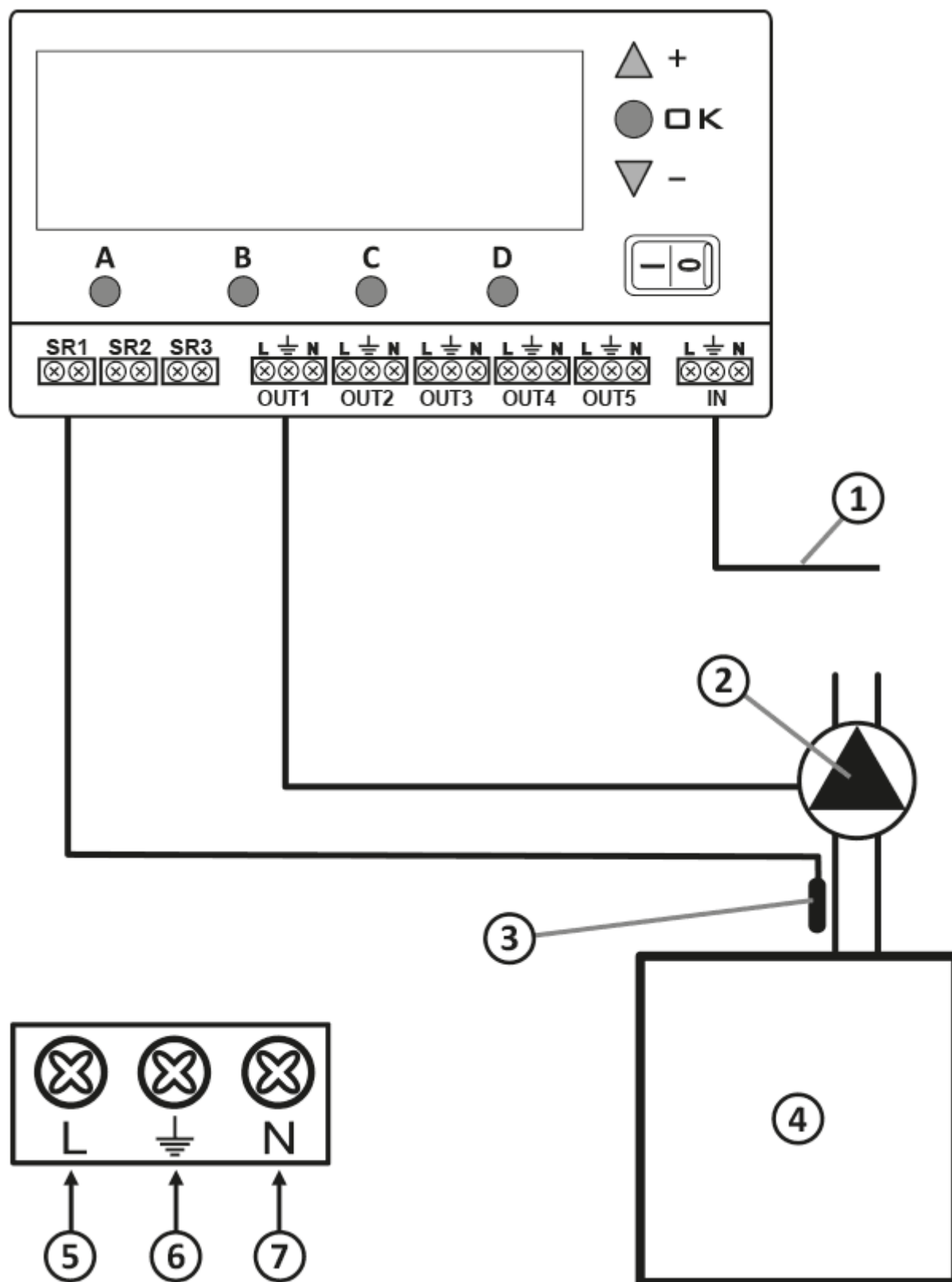
1. Power supply 230 V AC
2. Pump
3. Temperature sensor (attached with cable tie)
4. DH boiler.
5. Brown wire

6. Yellow-green wire
7. Blue wire

Description of work of the controller with DH pump and self-reversing actuator or second DH pump. – thermo fireplace system

(B-section of the display)

1. Indicator of DH pump's manual activation.
2. Indicator of DH pump operation.
3. Indicator of operation of three-way valve or second DH pump.
4. Indicator of manual switch-on of three-way valve or the second DH pump.
5. Indication of set DH temperature in the thermo fireplace system.
6. Actual temperature of DH sensor (**SR2**)
7. Indicator of the set temperature of the self-reversing actuator or the second DH pump.

AURATON Ursa uses two control outputs in the thermo fireplace system:

1. for the water pump in the fireplace circuit,
2. for the valve with an actuator or the second pump, which is necessary for proper operation of thermo-fireplace with DH system.

Upon switching on power supply, the sensor measures temperature in the water jacket of the thermo-fireplace and splits it into two independent channels.
Subject to the water temperature in the fireplace system, AURATON Ursa automatically switches on or off the DH water pump in thermo-fireplace system and opens the valve or switches on the second pump.

AURATON Ursa is equipped with **AntiStop** system to prevent seizure of unused pump rotor. After the end of the heating season, AURATON Ursa automatically starts-up the pump fortnightly for 30s.

Leave the controller ON to make the system operate after the end of heating season.

Installation

Mounting AURATON Ursa

Install the AURATON Ursa on a wall or other support using two screws (expansion dowels are included in the delivery). Fasten wires of AURATON Ursa to wall using holders.
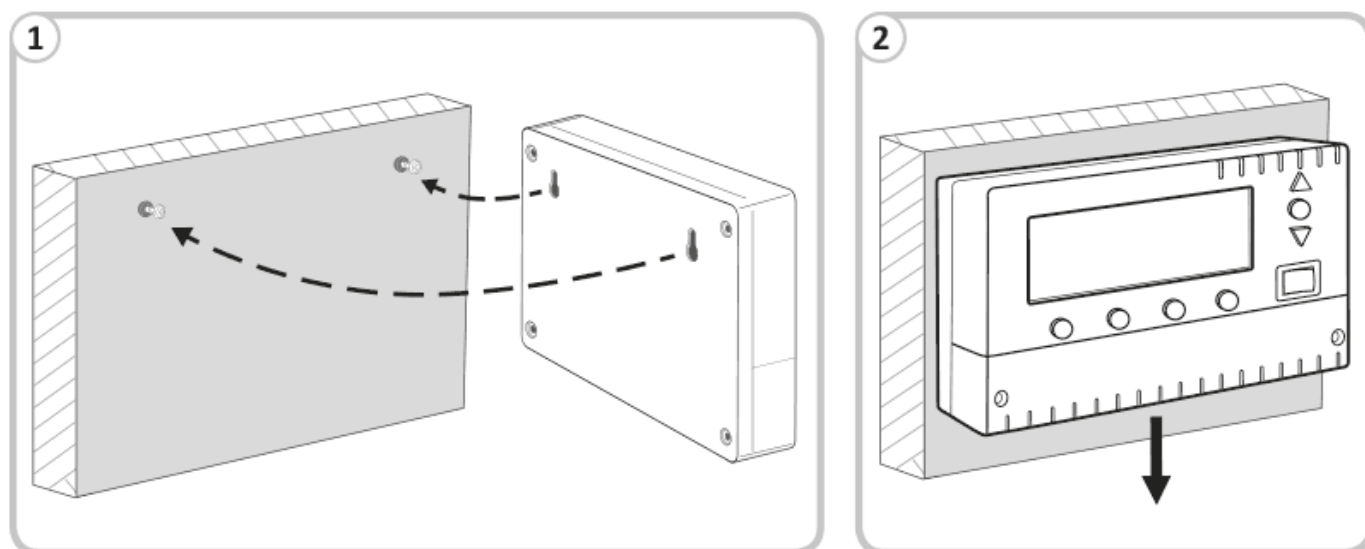
Sensor mounting:

Cut off protective caps before wiring. Connect the temperature sensor to **SR2** terminals of AURATON Ursa. Then install the sensor to outer face of water jacket of the fireplace or to the bare outlet pipe of the DH boiler. (as close as possible to the boiler). Do not immerse the sensor in any liquid and do not install on the flue gas outlet to the chimney.
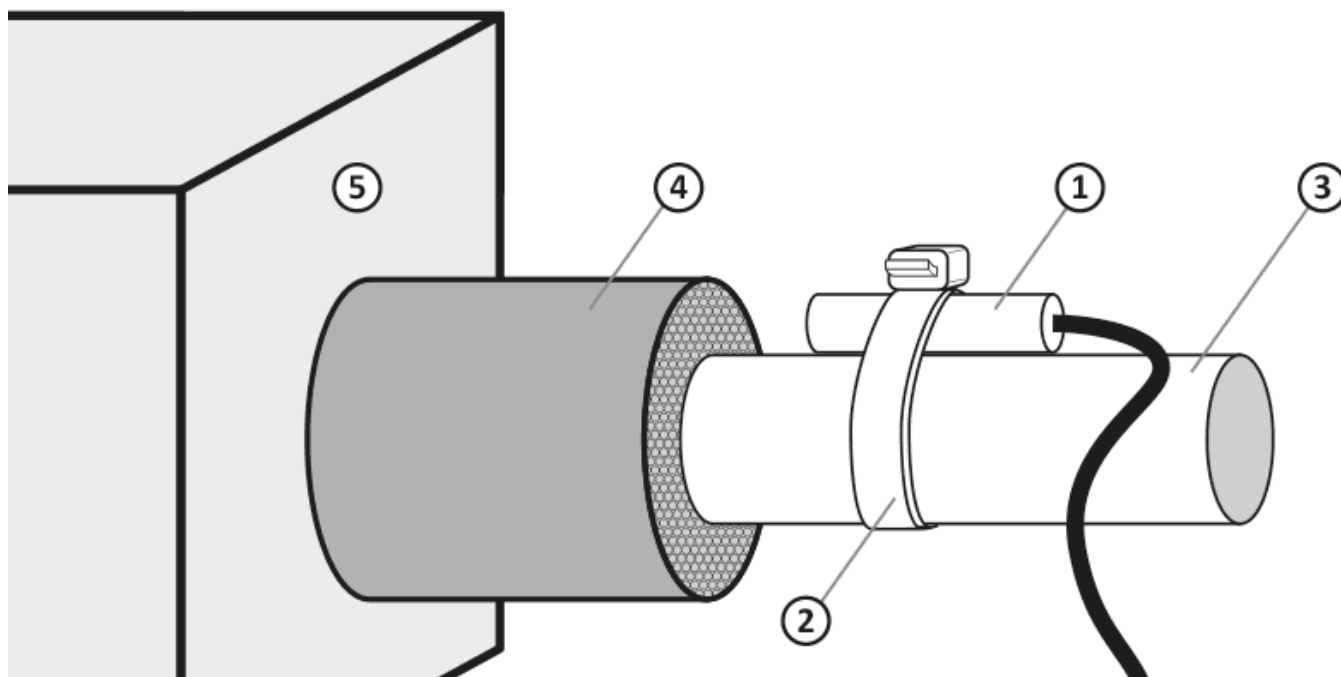
1. temperature sensor
2. cable tie
3. pipe
4. pipe insulation
5. DH furnace

Connection of DH pump's power cable.

Connect DH pump to OUT2 **OUT2** (**L**,⏚, **N**) terminals. Pump wiring: connect green or yellow-green (GND or PE), blue and brow wire to „⏚", „**N**" and „**L**" terminal, respectively.

Connection of supply cable to the valve (or to the second DH pump)

Connect the valve to OUT3 **OUT3** terminals (**L**, ⊥, **N**). of AURATON Ursa. Valve wiring: connect green or yellow-green (GND or PE), blue and brow wire to „⊥", „**N**" and „**L**" terminal, respectively.

Connection of AURATON Ursa

After protection of the wires against accidental breaking, connect one end of the power supply cable of AURATON Ursa to **IN** (**L**, ⊥, **N**) terminals, and the other end of the cable to a 230 V AC/50 Hz power outlet with a GND pin.

> ⚠️ **NOTE:**
> **The ambient temperature in the place of AURATON Ursa operation should not exceed 40 °C.**
>
> ⚠️ **NOTE:**
> **Prior to wiring works disconnect power supply.**

First start-up

Switching on AURATON Ursa controller

Set the switch 🔲 to position „**I**". Once the device is ON, all display segments go ON and software version is displayed for approx. 2 s followed by the „❄️▥" symbol and actual and set temperature at the sensor (4 and 5, respectively).

Setting range

- The temperature (0 to 99 °C) is measured using SR2 **SR2** sensor,
- DH pump is controlled through **OUT2** output,
- Self-reversing actuator or the second DH pump is controlled through **OUT3** output,
- The setting range for DH pump and self-reversing actuator (or second DH pump) is 10 to 85 °C, the hysteresis (temperature offset between switching ON and OFF the pump) is adjustable from 2 to 10 °C.

Change of temperature

Press and release „**B**". ndicator of the set DH temperature (left) for the fireplace system starts flashing. Use „**+**" or „**–**" button to set the desired temperature value. Press „**B**" button again – the (right) temperature setpoint indicator for the valve or the second DH pump in the fireplace system starts flashing. Use „**+**" or „**–**" button to set the desired temperature value. Confirm the set value within 10 s by pressing the „**OK**" button. Otherwise, new value is not saved and AURATON Ursa returns to the previous setting.

Hysteresis change

Press „**B**" button under the temperature setting. The current setpoint (left indicator) starts blinking. Press „**B**" button again. Right temperature indicator starts flashing. Press "B" button again to edit the hysteresis value (**HI**) for DH pump. Setting range: 2 – 10 °C. (left indicator). Set the desired value using „**+**" or „**–**" button. Press "B" button again to set the hysteresis (**HI**) within the range from 2 to 10 °C for the valve or the second DH pump (right indicator). Use „**+**" or „**–**" button to set the desired hysteresis value. Confirm the set value within 10 s by pressing the „**OK**" button. Otherwise, new value is not saved and AURATON Ursa returns to the previous setting.
E.g.. When the set temperature is 40 °C and hysteresis is 4 °C, the pump switches on at 42 °C and off at 38 °C.

Changing the pump's forced operation mode

Press „**B**" button under the temperature setting. The current setpoint (left indicator) starts blinking. Press „**B**" button again. Right temperature indicator starts flashing. Press „**B**" button next time to edit the **HI** value set in the left indicator. Press „**B**" button again to edit the **HI** value set in the right indicator.

Press „**B**" button again. The value of 85 °C is displayed in the left temperature indicator and the pump forced operation symbol (|) ppears on the right side of the display. Use „**+**" or „**-**" button to set the pump to run continuously (|) or to switch off (/) once the temperature value has increased above 85 °C. Use „**+**" or „**-**" utton to set the maximum value of 55 °C, above which the DH pump goes off (e.g. for floor heating).
Set the behaviour of the valve or the second DH pump in the same way. Upon setting the selected mode, confirm it (within 10 seconds) by pressing „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

Automatic mode of operation

AURATON Ursa switches on or off the pump and valve depending on the set temperature. In the DH system, the pump and valve turn ON when the temperature in the place where the sensor is located rises above the set value, and turn OFF when the temperature drops below the value set on AURATON Ursa with appropriate application of the set hysteresis.

Manual mode – continuous operation

STEP 1
To activate manually the DH pump in the thermo fireplace system (regardless of the temperature on **SR2**) sensor), press and hold down „**B**" button for 3 s. The hand symbol „🤚" appears on the display left to the icon of DH pump operation in the fireplace system.

STEP 2
Press and hold down „**B**" button for 3 s again to activate the manual mode „🤚" of three-way valve (or second DH pump) „🤚" (hand symbol on the right).

STEP 3

Press and hold down „**B**" button for 3 s again to disable the manual mode of DH heating pump operation „✋" (left side).

STEP 4

Press and hold down „**B**" button for 3 s again to disable the manual mode „✋" of self-reversing valve (or the second DH pump) in the thermo fireplace system (right side).

Wiring diagram

Example of wiring diagram. The displayed diagram is simplified and does not show all items required for proper operation of the device.
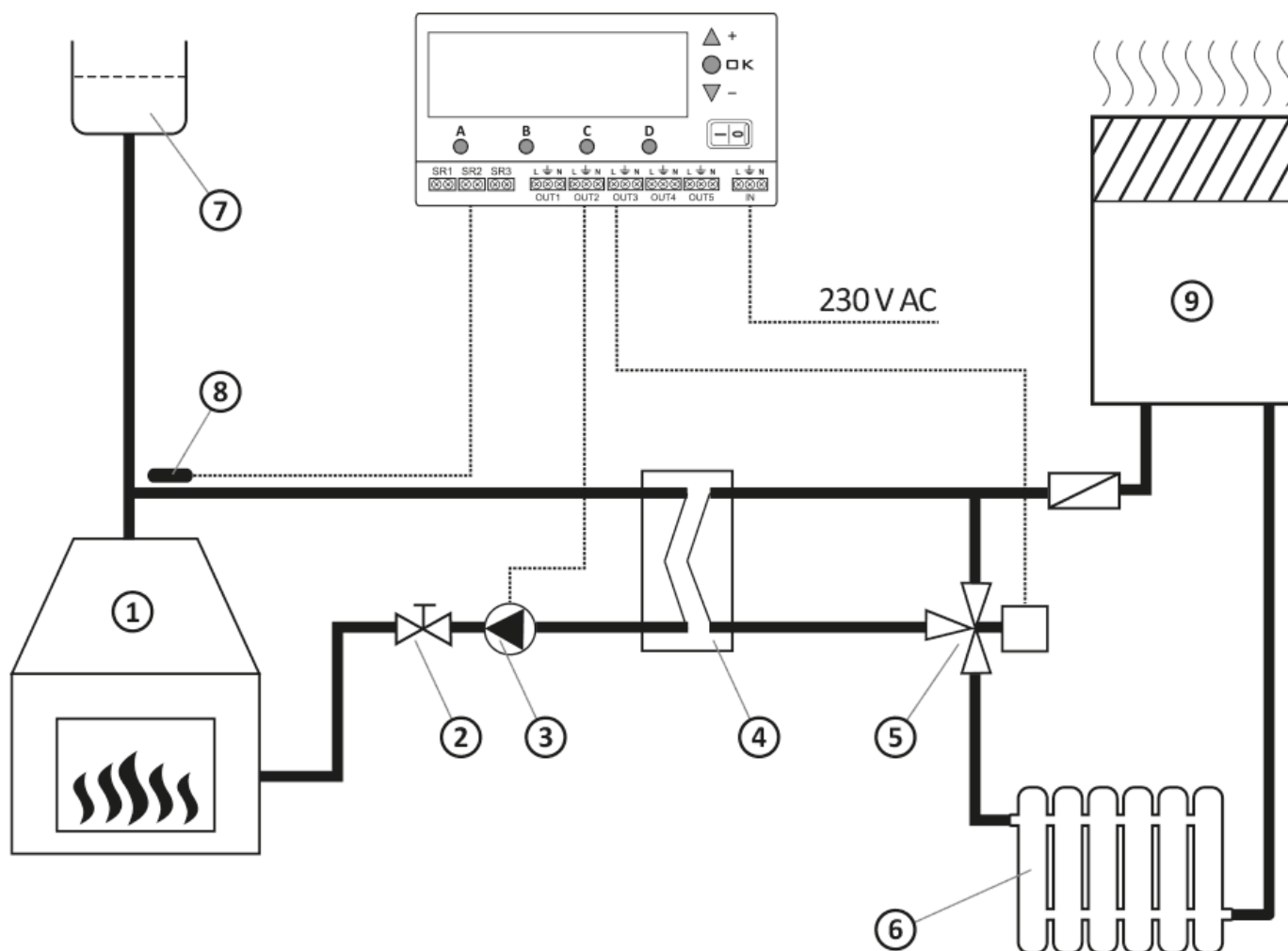
1. thermo fireplace with water jacket
2. cut-off valve
3. pump
4. heat exchanger
5. self-reversing actuator
6. heat receiver (e.g. radiator)
7. equalizing vessel
8. temperature sensor
9. DH boiler

NOTE:
If only SR2 sensor is connected, the remaining controller functions are disabled – i.e. indications of pump operation/ control in DH and DHW systems and blower control are inactive.

Description of operation with DHW pump

(section C of the display)
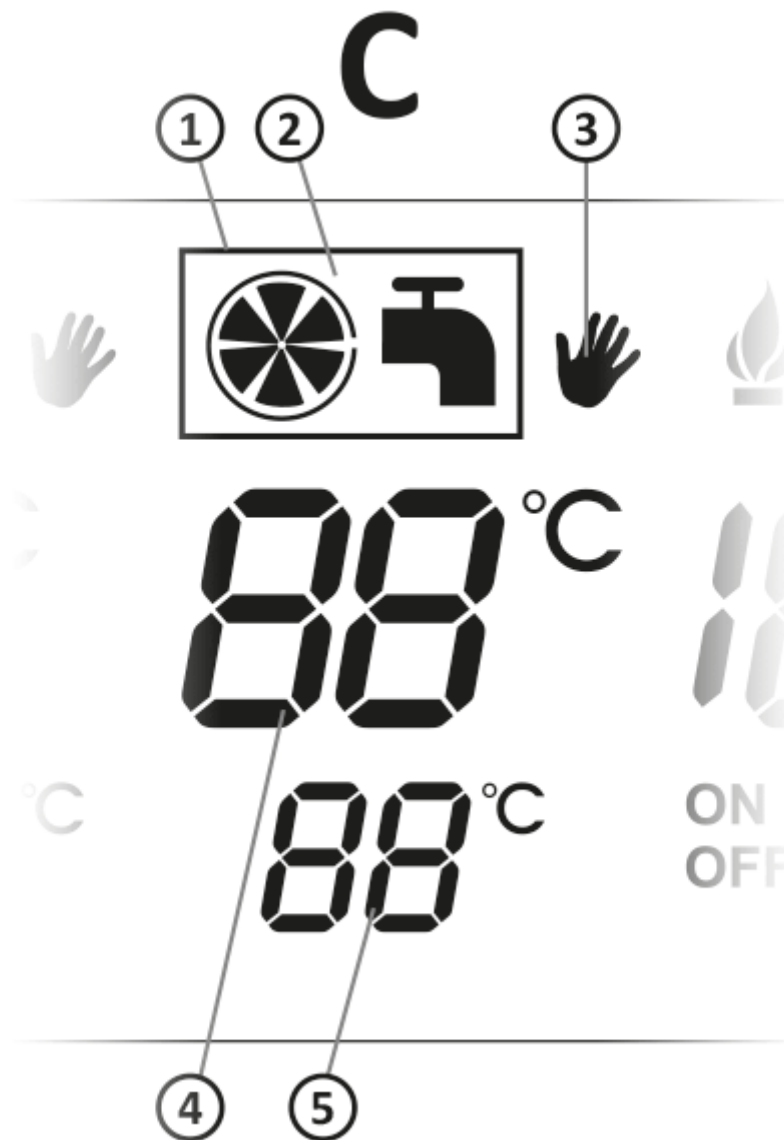
1. Display (frame) of DHW priority over DH function
2. Indicator of DHW pump operation
3. Indicator of manual activation of the pump in DHW system
4. Actual temperature of DHW sensor (SR3)
5. Set temperature of DHW sensor

AURATON Ursa is also designed to control circulating pump operation (in function of the temperature) in DHW system in AUTO mode. The controller maintains constant water temperature in the tank or in the DHW system.

AURATON Ursa has a priority function. It prevents cooling down of water in DHW tank.

Operation with inactive priority of DHW over DH function.

If the priority of DHW over DH function is disabled, the pump is activated in the DHW system depending solely on the set and actual temperature at **SR3** sensor installed in the tank.

Setting range

The temperature (within the range of 0 to 99 °C) is measured by SR3 sensor. The DHW pump is controlled through **OUT4** output. The setting range for DHW pump is from 10 to 85 °C. Hysteresis (ON/OFF temperature difference) is adjustable from 2 to 10 °C.

Programming the DHW function

Press „**C**" button. The set value of 50 °C (default setting) starts flashing. Use „**+**" or „**-**" button to set the desired temperature.
Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, new value is not saved and AURATON Ursa returns to the previous setting.
nce new value has been saved, AURATON Ursa exits the settings and enters normal operation (the temperature setting stops flashing). AURATON Ursa turns off DHW pump (**OUT4**) if the temperature on **SR3** sensor exceeds the set value by the set hysteresis, and turns it on if the temperature drops by more than the set hysteresis value.

Manual mode – continuous operation

To switch on the circulating pump manually (regardless of the temperature at **SR3** (DHW) sensor), press and hold down „**C**" button for 3 s. The „✋" symbol appears on the display. Press and hold down „**C**" button again for 3 seconds to switch off the manual operation of DHW pump.

> **NOTE:**
> **f the temperature at the sensor (SR3) exceeds 85 °C, DHW pump turns off. It is a protection against overheating of hot water in the tank.**

Operation with active priority of DHW over DH function.

If the priority of DHW over DH function is enabled, activation of the pump in DHW system depends not only on the set and actual temperature at **SR3** sensors installed in DHW tank, but also on the temperature at **SR1** sensor (for DH).
With active priority of DHW over DH function, if operation of two (DHW and DH) pumps is required at the same time (provided that **SR1** [DH] temperature sensor and DH pump supply cable are connected to [**OUT1**]), operation of DHW pump has priority.
It means at first DHW pump turns on and works until the desired temperature has been reached, and then, DH pump turns on. Another function of the priority of DHW over DH causes DHW pump does not turn on if the temperature on SR1 sensor (for DH) is lower than the temperature on SR3 sensor (for DHW). In this way cooling down of water in DHW tank is prevented.

Installation

Mounting AURATON Ursa

Install the AURATON Ursa on a wall or other support using two screws (expansion dowels are included in the delivery). Fasten wires of AURATON Ursa to wall using holders.
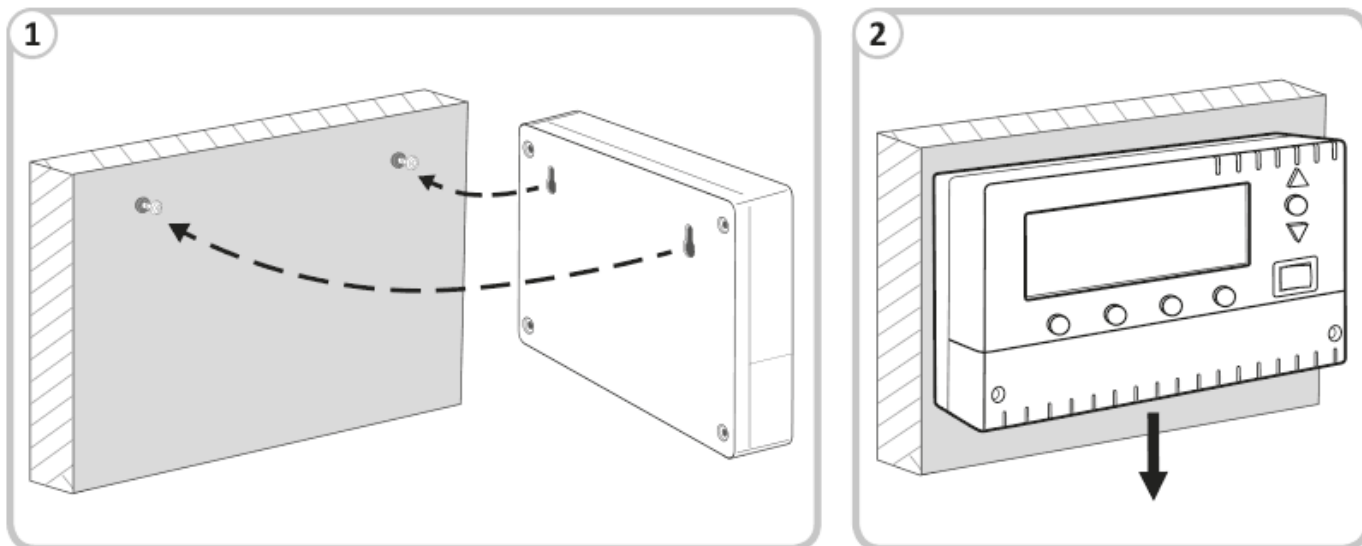
Sensor mounting:

Connect temperature sensor to **SR3** terminals at AURATON Ursa, and fasten it in the DHW tank. Do not immerse the sensor in any liquid and do not install on the flue gas outlet to the chimney. Maximum temperature measurement: 99 °C.

Connection of DHW pump's power cable.

Connect DHW pump to OUT4 (**L**, ⏚, **N**) terminals on the AURATON Ursa. Pump wiring: connect the green or yellow-green (GND or PE), blue and brow wire to „✋", „**N**" and „**L**" terminal, respectively.

Connection of AURATON Ursa

After protecting the wires from accidental damage, connect the power cable to IN terminals **IN** (**L**, ⏚, **N**) of the controller. Then connect the other end of the cable to a 230 V AC/50 Hz power outlet with a GND pin.

First start-up

Switching on AURATON Ursa controller

Turn the ⊟ switch to „**I**" position. Once the device is ON, all display segments go ON and software version is displayed for approx. 2 s followed by the „❋▥" symbol and actual and set sensor temperature (4 and 5, respectively).

Temperature change

Press „**C**" button. The set temperature indicator in DHW system starts flashing. Use „**+**" or „**-**" button to set the desired temperature value. Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, new temperature is not saved and controller returns to the previous setting.

Hysteresis change

Press „**C**" button below the temperature setting. The digits start blinking and indicate the current set

value. Press „**C**" button again to display the set hysteresis (**HI**). Use „**+**" or „**–**" button to set the desired hysteresis value from 2 to 10 °C (with a 2 °C increment). Confirm the set value within 10 s by pressing the „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

E.g.: When the set temperature is 40 °C and hysteresis is 4 °C, the pump switches on at 42 °C and off at 38 °C.

Enabling the priority function

Press „**C**" utton below the temperature setting. The digits start blinking and indicate the current set temperature. Press „**C**" button again to display the set hysteresis (**HI**). Then, press the „**C**" button again to display indicator of DHW pump operation. (🚰).

Use „**+**" and „**–**" button to enable or disable the priority function. Active priority function is indicated by a highlighted frame around indicator of DHW pump operation (🚰). When priority function is inactive, the frame around indicator of DHW pump operation is missing (🚰).

Activation of emergency heat collection function

NOTE:
Emergency heat collection function is disabled by default. Use extreme caution when using this function. In extreme cases, temperature in DHW tank may reach approx. 85 °C and can cause severe burnings! Take particular care of children playing around!


Press „**C**" button below the temperature setting. The digits start blinking and indicate the current set temperature. Press „**C**" button again to display the set hysteresis (**HI**). Then, press „**C**" button again to display indicator of DHW pump operation (🚰).

Press „**C**" button again to enable or disable the emergency heat collection function. Blinking dashes appear in „**A**" and „**C**" sections corresponding to the active and inactive function, respectively. Once the dashes are displayed, use „**+**" or „**–**" button to make changes. When the function is activated, the value of 85 °C is displayed in „**A**" section, which means the DH pump turns ON (in "A" section) once the temperature measured by **SR1**) sensor rises above this value. The value of 85 °C is displayed in „**C**" section (the set value), which means the DHW tank will collect heat, but only to the temperature of 85 °C (**SR3**). The forced operation indicator (for DH pump, which is ON) is also displayed. Confirm the set value within 10 s by pressing the „**OK**". button. Otherwise, the change is not saved and

AURATON Ursa returns to the previous setting.

The emergency heat collection function is used when the temperature in the system has grown to a hazardous level above 85 °C and the heat cannot be quickly consumed by the heating system. In this case, DHW tank is used as a heat buffer. The DH pump in section „**A**" is also used.
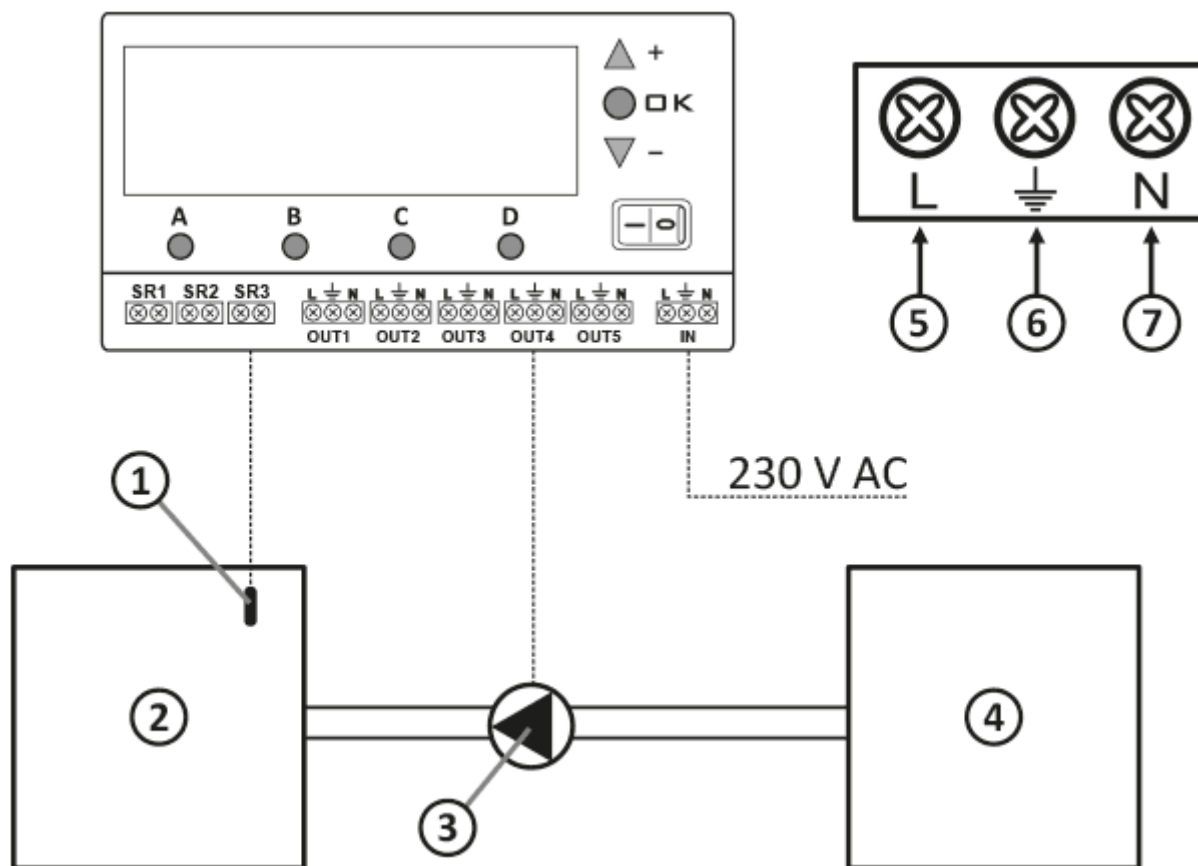
> **NOTE:**
>
> **The emergency heat collection function uses DH pump in section "A" only when the forced pump mode (⫯) in "A" section is activated.**

Wiring diagram

In DHW circuit
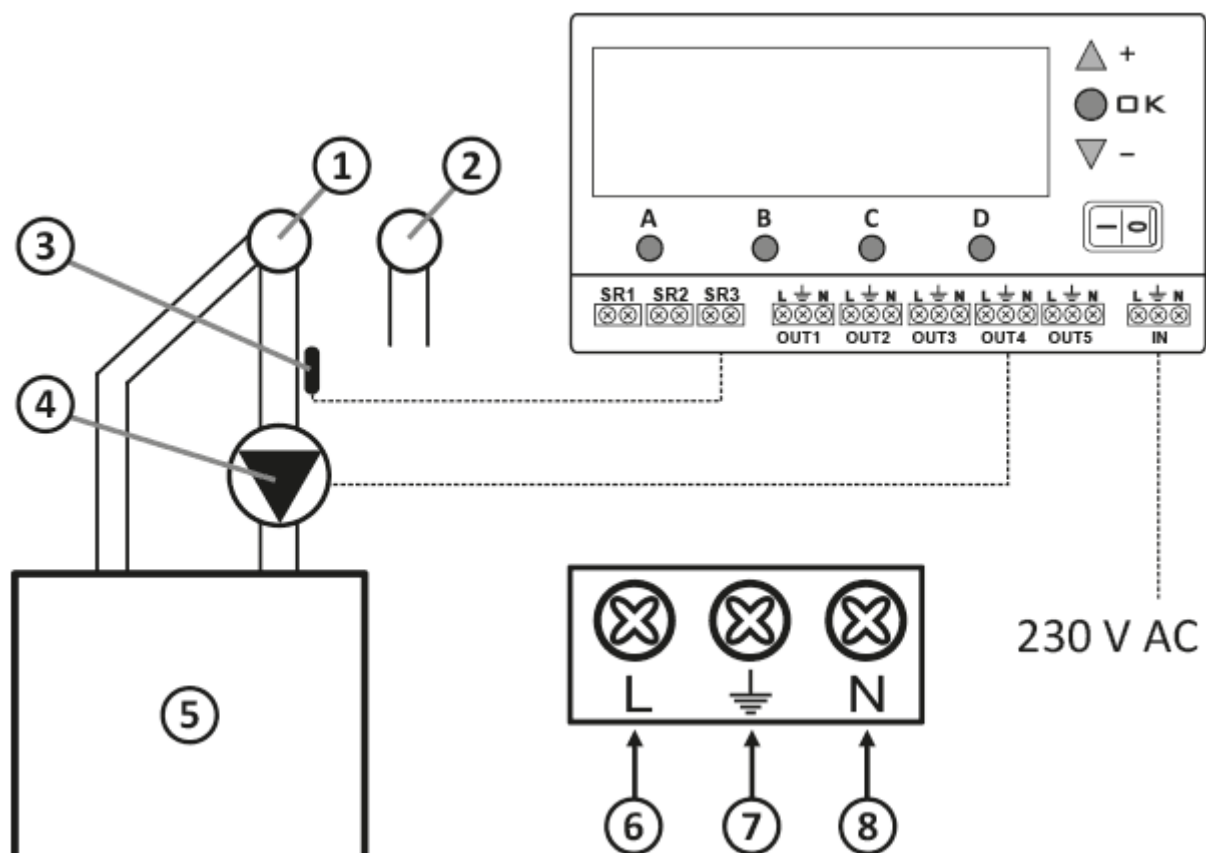
1. hot water
2. cold water
3. Temperature sensor (fasten using cable tie)
4. Pump
5. DHW tank
6. Brown wire
7. Yellow-green wire
8. Blue wire

With DHW cylinder

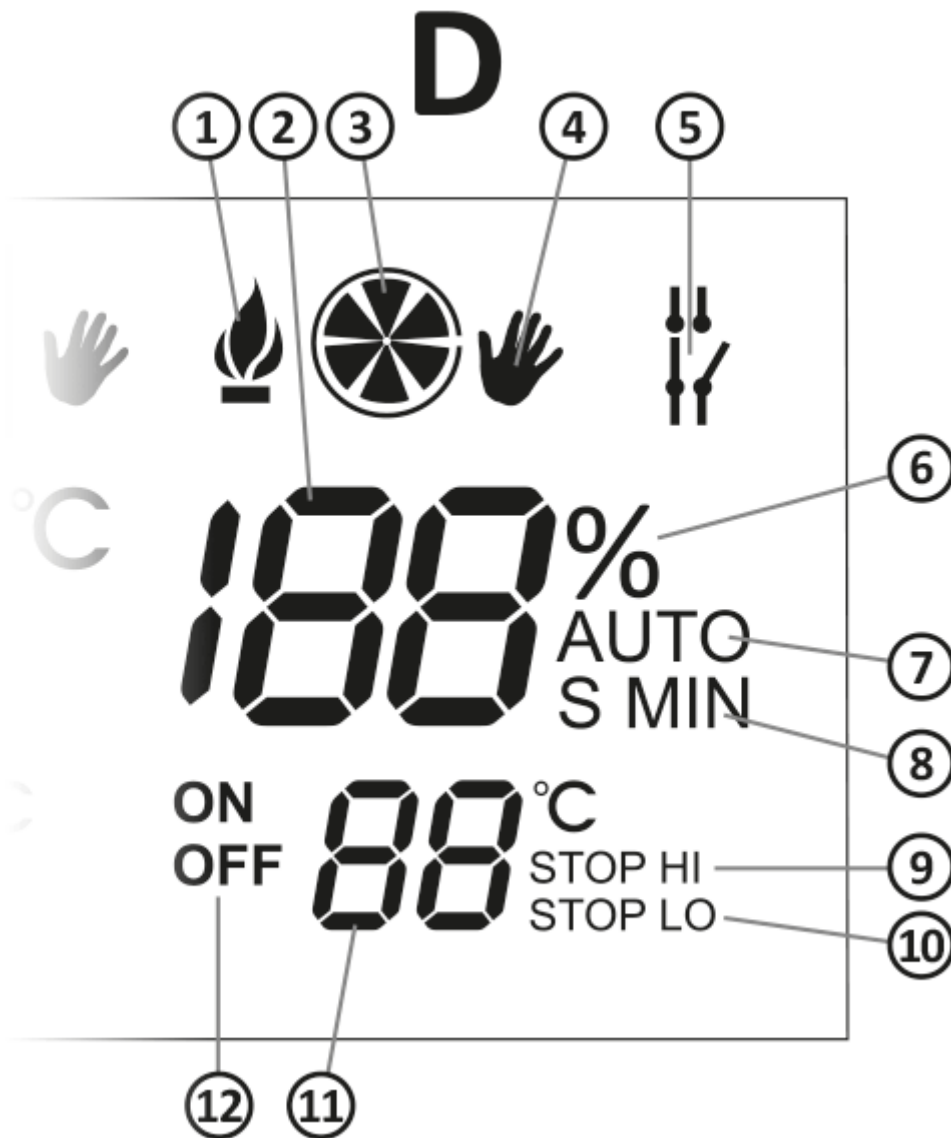1. Temperature sensor
2. DHW tank
3. Pump

4. Boiler
5. Brown wire
6. Yellow-green wire
7. Blue wire

NOTE:
If only SR3 sensor is connected, the remaining AURATON Ursa functions are disabled – i.e. indication of DH pump operation (SR1), operation of three-way valve in the thermo fireplace system, and blower control are inactive.

Fan control

("D" section of the display)

D

1. Firing-up indicator
2. Down-counting fan operation time and time-out between blows ("EE" signalling, setpoints of hysteresis; fan power and start time)
3. Fan operation indicator
4. Indicator of manual fan activation
5. Indicator of forced operation (of DH pump)
6. Indicator of fan power (%)
7. AUTO function indicator
8. Time units (S – seconds, MIN – minutes)
9. STOP HI function indicator
10. STOP LO function indicator
11. The set temperature limit above which fan turns on and off cyclically (according to the settings)
12. Symbols of setting the fan running time (ON) and time-out between blows (OFF)

AURATON Ursa is an advanced CPU-based controller designed to work with blowing DH boilers fuelled with coal and coal dust.

Depending on the temperature of water in the boiler, AURATON Ursa automatically switches on or off flue water pump in the DH system with a coal boiler and the blower installed under the furnace.
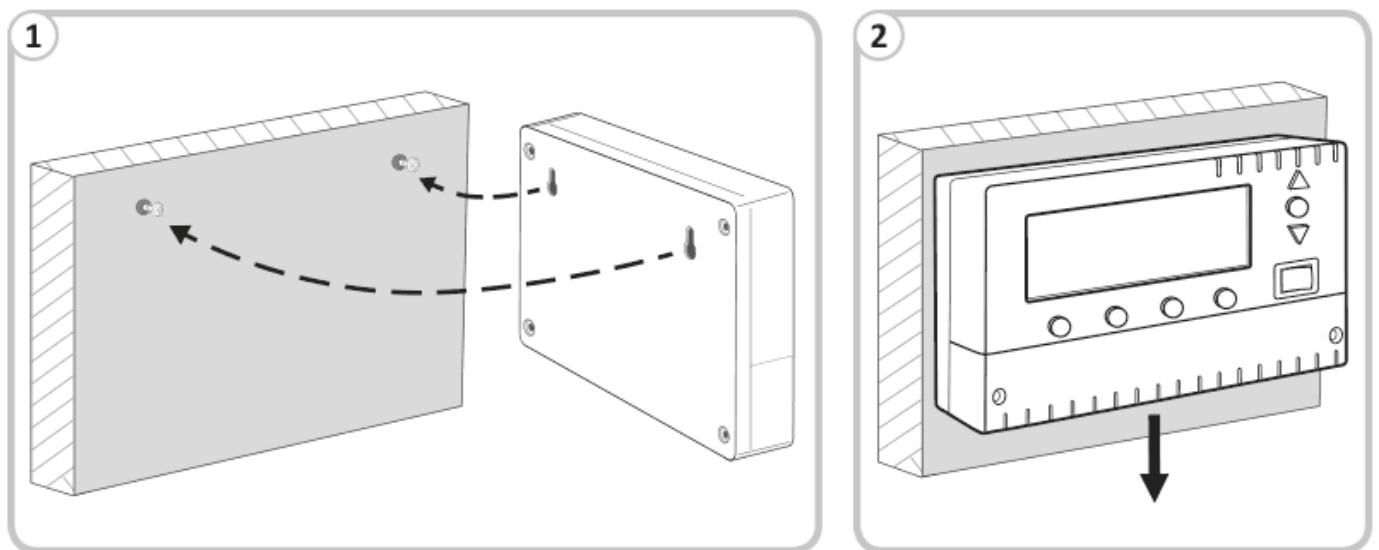
The AURATON Ursa sensor measures the temperature of water in the boiler and controls the pump and the blower based on the actual temperature.

AURATON Ursa is equipped with **AntiStop**, system to prevent seizure of unused pump rotor.

Installation

Mounting AURATON Ursa

Install the AURATON Ursa on a wall or other support using two screws (expansion dowels are included in the delivery). Fasten wires of AURATON Ursa to wall using holders.

Sensor mounting:

In AURATON Ursa – connect the temperature sensor to **SR1** terminals. Then install the sensor on the boiler in the designated location. Do not immerse the sensor in any liquid and do not install it on the flue gas outlet to the chimney. Maximum temperature measurement: 99 °C.

Connecting the power cable to the blower

Connect the blower to **OUT5** (**L**, ⏚, **N**) terminals in the AURATON Ursa. Blower wiring: connect the green or yellow-green (GND or PE), blue and brow wire to „⏚", „**N**" and „**L**" terminal, respectively.

Connection of AURATON Ursa

After protecting the wires from accidental damage, connect the power cable to IN terminals **IN** (**L**, ⏚, **N**) of the controller. Then, connect the other end of the cable to 230 V AC/50 Hz power socket with a grounding pin.

> ⚠️ **NOTE:**
> **The ambient temperature in the place of AURATON Ursa operation should not exceed 40 °C.**
>
> ⚠️ **NOTE:**
> **Prior to wiring works disconnect power supply.**

Switching on AURATON Ursa controller

Turn the switch ▣ to „**I**" position. After switching on, all display segments are lit for approx. 2 s and the software version is displayed. Then, the controller indicates the current temperature of **SR1** sensor.

Setting range

- Temperature setting (from 10 to 85 °C),
- Setting of running time and time-out between blows from 0 s to 99 min.
- The fan is controlled through **OUT5** output; the set temperature refers to the temperature measured by **SR1** sensor (DH).
- Hysteresis is adjustable from 2 to 10 °C (in steps of 2 °C).

Temperature change

Press shortly „**D**" button once. The set value of -°C (by default the fan is off) starts flashing. Then, use „**+**" or „**–**" button to set the required temperature above which the fan will cyclically turn on and off.

Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, new temperature value is not saved and AURATON Ursa returns to the previous setting.

Change of fan running time and cyclical operation break duration.

Press „**D**" button once. Indication of fan temperature starts flashing. Press „**D**" button again within 10 s to enter the mode of programming the cyclical time of fan operation (blow time – factory set value is 10 s). Use „**+**" or „**–**" button to set the desired value (excess of 59 s changes automatically time counting to minutes).

Press „**D**" button again within 10 s to set cyclical fan break duration (time-out between two successive blows – the factory set value is 5 min.). Now, use „**+**" or „**–**" button to set the desired value (once the time dropped to less than 1 minute, it will be automatically counted in seconds). Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

AUTO working mode
During normal operation when AURATON Ursa ramps up to reach the desired temperature value in „**D**" section, **AUTO** is displayed. The fan works with full power (set in %) until the set temperature has been reached. Then, the fan starts operation in cycles separated by the set time-out.

Furnace stop function

Has the temperature at **SR1** ensor fallen below the set value (factory setting: 30 °C) for at least 30 minutes, the fan is switched off for good and the display shows the blinking message **STOP LO**. The fan turns automatically on when the temperature at **SR1** sensor rises above 30 °C.

Temperature of fan disabling can be set within the range from 15 to 40 °C. To set the desired value, press „**D**" button to display fan temperature indicator. Press it again to display the fan run time and cycle break duration. Press „**D**" button again (to display the switch-off temperature and **STOP LO** message), and proceed to set the temperature of final fan switch-off.

Use „**+**" or „**–**" button to increase or decrease the value, respectively and set the desired value. Confirm (save) the set value within 10 seconds pressing „**OK** button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

Hysteresis change

Press „**D**" button to display the fan temperature. Press it again to display the fan run time and duration of fan operation break. Press „**D**" button again to display temperature triggering fan switch off for good and the message **STOP LO**). Press „**D**" button again and use „**+**" or „**–**" button to set the desired hysteresis. Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

E.g. for the hysteresis of 4 °C and the temperature set at 40 °C, fan starts continuous operation when the temperature drops below 38 °C and starts intermittent operation at 42 °C.

Setting the maximum fan power

AURATON Ursa has the function to limit the fan power expressed in %. It can be set within the range from 30 % to 100 % (100 % means full fan power). To change the setting, press „**D**" button to display the fan temperature. Press it again to display the fan run time and duration of fan operation break. Press „**D**" button again to display temperature triggering fan switch off for good and the message **STOP LO**). Press „**D**" button again to set the desired hysteresis.

Press „**D**" button again to set maximum fan power (the displayed default value is 100 %). Use „**+**" or „**–**" button to increase or decrease the value, respectively and set the desired fan power. Confirm

(save) the set value within 10 seconds pressing „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

NOTE:
Setting the maximum fan power within the range from 30 to 100 % means that the fan will also run with the set power during firing-up.

Setting the fan soft start time

AURATON Ursa enables setting the time of fan ramping-up to the full power set in % *(see "Setting the maximum fan power").* Duration of fan soft start may be set from 0 s (start with full power set) to 15 s ramping time (to reach the set full power). Use „**+**" or „**-**" button to increase or decrease the ramping time. Confirm (save) the set value within 10 seconds pressing „**OK**" button. Otherwise, the change is not saved and AURATON Ursa returns to the previous setting.

Manual mode – continuous operation

To switch on the fan manually (regardless of the temperature on SR1 sensor), press and hold down „**D**" button for 3 s. The „✋" sign appears next to the fan symbol on the display. To disable manual pump operation, press and hold down „**D**" button again for 3 s.

Automatic firing-up function

The 🔥 symbol in the „**D**" section means the fan is switched on for continuous operation with the maximum power (set in %) and circulating pump in „**A**" section is off; the boiler fires up when, after switching on the AURATON Ursa with ▭ switch, **SR1** water temperature is lower by at least half of the hysteresis than the value set in „**D**" section. The display in „**D**" section shows down counting the time of 30 minutes required to fire up the boiler

If the temperature in „**D**" (**SR1**) section is not reached within 30 minutes, the fan turns off and at the same time DH pump in „**A**" section turns ON (firing-up symbol is flashing).

The 🔥 symbol (of firing-up) turns off automatically once the furnace temperature has reached the value set in „**D**" section; AURATON Ursa now starts normal operation. To start the firing-up function turn on and off AURATON Ursa using 🔲 switch.

Adding fuel to the furnace

During normal operation it is possible to add fuel and at the same time stop fan operation in two ways:

1. Turn off AURATON Ursa using the 🔲 switch. Add fuel, switch on the AURATON Ursa and activate simultaneously the firing-up function OR
2. Use the refuelling function. To activate it press and hold down „**D**" button for 5 s: after 3 s the „✋" symbol is displayed, and after further 2 s refuelling function is activated.

„**D**" ection of the display shows a 20-minute down counting, upon which the AURATON Ursa returns to normal operation (before fan switch on, sound warning is generated).
Press and hold down „**D**" button for 5 s to stop refuelling function at any time.

Emergency fan shutdown

If the temperature in section „**D**" (sensor **SR1**) exceeds 90 °C, the fan turns off (**STOP HI** flashes on the display) and remains off until the temperature drops below this value.

Explanation of display functions

LO

AURATON Ursa displays „**LO**" if the temperature at **SR1**, **SR2** and **SR3** sensors exceeds 0 °C.

EE

AURATON Ursa displays „*EE*" if the temperature on **SR1**, **SR2** and **SR3** sensors exceeds 99 °C

Connection diagram of AURATON Ursa to the pump and boiler blower

NOTE:

If only SR1 sensor is connected, other AURATON Ursa functions are disabled, i.e. indication of DH pump operation in the thermo fireplace system and of the pump control in the DHW system are inactive.
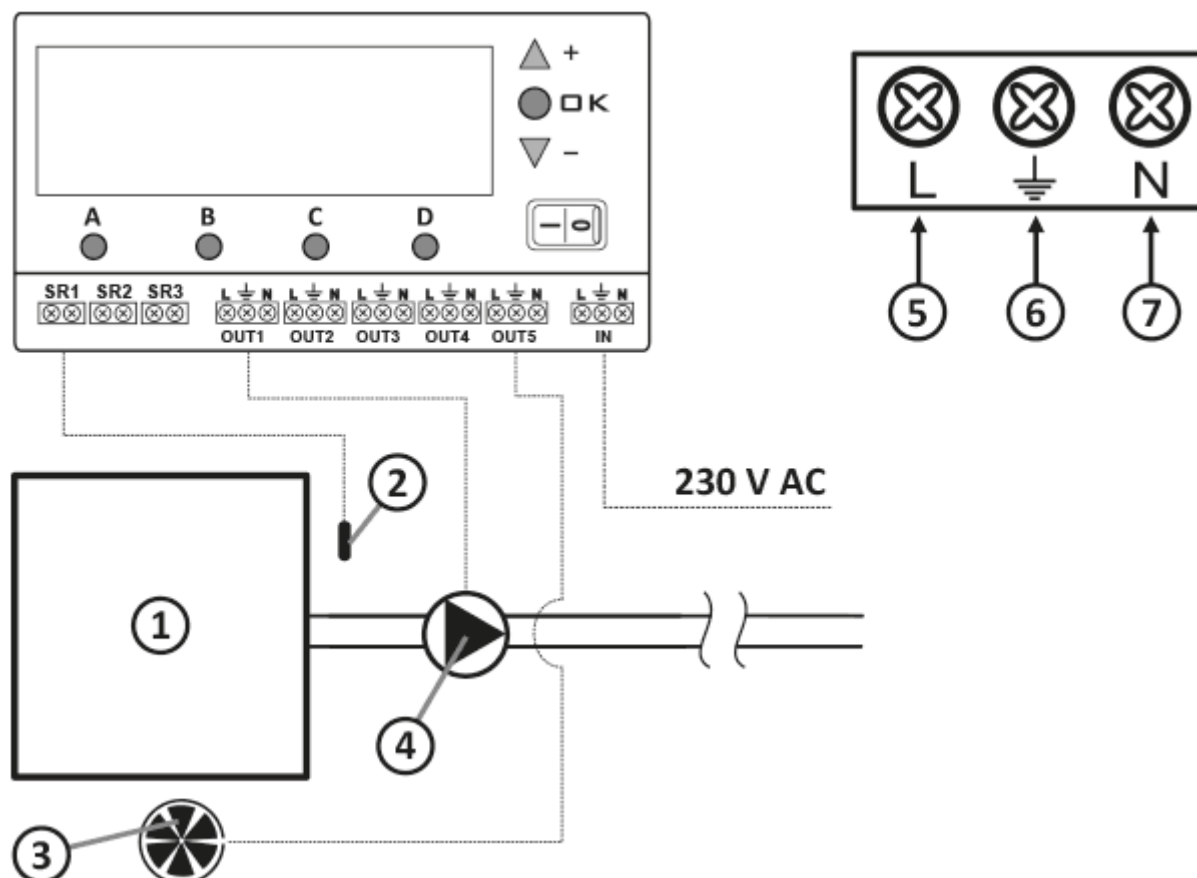
1. DH boiler
2. Temperature sensor
3. Fan
4. Pump
5. Brown wire
6. Yellow-green wire
7. Blue wire

Screen backlight

Press any button to switch on display backlight for approx. 1 minute.
To switch on display backlight for continuous operation, press and hold down „**OK**" and „**+**" button for

approx. 3 seconds. Activation of the backlight is confirmed by a beep.
Press „**OK**" and „**-**" button to switch off continuous display backlight. Function disabling is confirmed by an audible signal.

NOTE:
First pressing of any function key always turns on the backlight (if the continuous backlight is off), and next pressing activates the key function. Any change made using the buttons is confirmed by audible signal.

RESET AURATON Ursa

In urgent cases (e.g. AURATON Ursa freezing) use „**RESET**" function. This button is located in the output compartment under the lid.
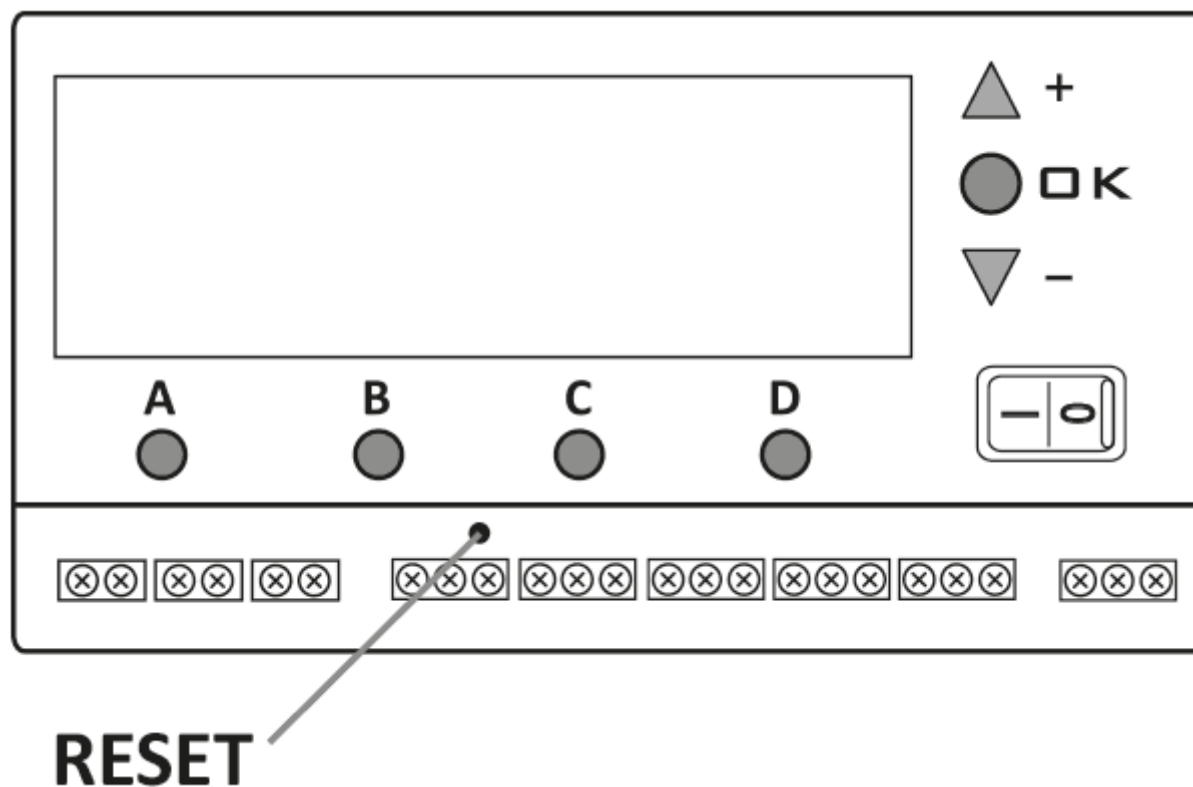
Master RESET AURATON Ursa

se this function to restore overall factory settings. To enable this function press and hold down three buttons: „**+**", „**OK**" and „**-**" at the same time for 5 seconds.

Cleaning and maintenance

1. Clean the outside of the device with a dry cloth. Do not use solvents (such as benzene, thinner or alcohol).
2. Do not touch the device with wet hands. It may result in an electric shock or serious damage to the device.
3. Do not expose the device to excessive smoke or dust.
4. Do not touch the screen with a sharp object.
5. Avoid contact of the device with liquids or moisture.

Technical specifications

Working in DH system.

Adjustable temperature range:	10–85 °C
Measurement range:	0–99 °C
Hysteresis (on/off temperature difference):	od 2 do 10 °C
Supply voltage:	230 V AC

Maximum load for output sum:	6 A

Working with DH pump and three-way valve "Z" (or second DH pump. – thermo fireplace system)

Adjustable temperature range:	10–85 °C
Measurement range:	0–99 °C
Hysteresis (on/off temperature difference):	from 2 to 10 °C
Supply voltage:	230 V AC
Maximum load for output sum:	6 A

Working with DHW pump.

Adjustable temperature range:	10–85 °C
Measurement range:	0–99 °C
Hysteresis (on/off temperature difference):	from 2 to 10 °C
Supply voltage:	230 V AC
Maximum load for output sum:	6 A

Controlling the fan

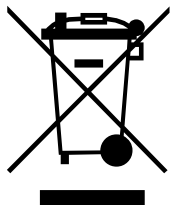| Adjustable temperature range:	10–85 °C
Measurement range:	0–99 °C
Hysteresis (on/off temperature difference):	from 2 to 10 °C
Supply voltage:	230 V AC
Maximum load for output sum:	6 A
Maximum load in "D" section	1 A (230 W/AC switch)
Blow time and duration of break between blows:	0–59 sek. and 1–99 min.

Disposing of the devices

The devices are marked with the crossed-out wheeled bin. According to European Directive 2012/19/EU and the Waste Electrical and Electronic Equipment Act, this kind of marking indicates that the equipment, after its operational life must not be disposed of together with other waste from households.
The user shall return it to a collection point for electrical and electronic waste.

Contact and address of the manufacturer:
LARS, ul. Świerkowa 14
64-320 Niepruszewo
www.auraton.pl

Download

- User manual
- Declaration of conformity