AVANSA 110-Z

CONTROLLER FOR CIRCULATION PUMP AND HOT WATER BOILER SUPPLY PUMP

1. AREAS OF USE

AVANSA 110-Z is a modern electronic controller that can be used in the heating equipment of solid fuel boilers for the coil of a heat circulation pump (radiators) and a pump that supplies heat to the coil of a hot water storage (hot water) boiler.

The controller will operate both pumps as follows:

- The circulation pump will start working if the temperature of the heating medium in the boiler (measured by **sensor 1**) is higher than a certain set value (70°C - 80°C is recommended), and will stop the circulation pump if the temperature drops below this value.

- The hot water boiler pump will work based on the temperature difference. The pump will start working when the temperature of the heating medium in the boiler (measured by **sensor 1**) is higher than the hysteresis value (set by the user) than the temperature of the water in the storage boiler (measured by **sensor 2**). The hot water pump will stop when the temperature in the boiler reaches the value set by the user or when the temperature in the boiler has the same value as the temperature of the heating medium in the boiler.

If the priority mode P for domestic hot water is activated, then the heat circulation pump will be turned off until the water temperature in the boiler reaches the set value.

The AVANSA 110-Z has a function called **ANTI-STOP that** prevents the pump rotor from snapping. If the pump does not work at all for 15 days, the controller automatically starts the pump for 15 seconds. An additional safety function is **the ANTI-FROST** function, which starts the pump when the heating substance temperature drops below 5°C. To perform these functions, you must always leave the controller turned on.

2. DESCRIPTION OF THE CONTROLLER

1. 230 VAC~ controller power supply (plug cable)
2. 230 VAC~ circulation pump supply
3. 230 VAC~ hot water boiler pump supply
4. Temperature sensor cable 2 (ACM boiler)
5. Temperature sensor cable 1
6. On (I) / Off (O)
7. Button△ - temperature increase
8. Button□ - temperature setting
9. Button▽ - temperature reduction

3. INSTALLATION

ATTENTION! There may be dangerous stresses in the device or cables.
It is forbidden to install a controller while it is connected to power. Installation will be carried out only by an authorized person.
Products with visible defects will not be installed.
Installation procedure:

a) Installation of the controller:
- The controller will be installed near the pump on the wall or other suitable surface using dowel screws.
- Controller cables will also be attached to the wall for protection.

b) Installation of temperature sensors:
- **Do not immerse the sensor in a liquid or in areas where there is steam**
- Install **sensor 1** , which measures the temperature of the heat carrier on the exhaust pipe of the heat carrier in the boiler (flow) as close as possible to the boiler, and insulate the pipe and sensor.
- Install **sensor 2** , which measures the temperature in the hot water boiler, inside the hot water boiler housing, in the place provided for the temperature sensor.
- The sensors will be attached to the pipe using a plastic clamp.
- **The sensor cable should not be in direct contact with the pipe, as it may melt.**

c) Connecting cables to the pump terminals:
- Connect the yellow-green cable to the terminal ⏚ (grounding)
- connect the blue cable to the N terminal
- connect the brown cable to the L terminal

d) Checking connections:
- Check that all cable connections also comply with the pump instructions.

e) Connection to the mains:
- **Check that all cables are protected from accidental cutting**
- Insert the plug of the controller power cord into a grounded 230V/50Hz outlet.

The controller will not be installed in places where the ambient temperature may exceed 40°C.

4. TURN ON THE CONTROLLER

Toggle the side switch (figure 6) to position "I" (On). A red sign will appear on the screen ⏻.

5. CONTROLLER PROGRAMMING

After turning on the controller, the temperature measured by sensor 1 will be displayed on the display.

When you press ▽ the button on the screen, a symbol will appear ⊔ and the temperature measured by sensor 2 will be displayed.

The starting temperature of the circulation pump is set as follows:

1. Press the button ☐ , the sign will appear on the screen ⊏ , and it will start flashing for 5 seconds, during this time you will be able to set a new value.
2. **Set the new value by** pressing the buttons △ or ▽ until you reach the desired value. To confirm, wait 5 seconds until the sign stops flashing ⊏. The setting range is 5°C to 80°C.

   ATTENTION You can set the value of the pump start temperature by just pressing the button ☐ , when the sign ⊏ appears on the screen and it flashes. When the sign ⊏ does not appear on the screen, the temperature measured by the sensor is displayed on the screen.

Setting the temperature of the water in the boiler (the temperature at which the hot water boiler supply pump will stop) is carried out as follows:

1. Press the button ☐ several times until the sign ⊔ appears on the screen and it starts flashing, during this time you will be able to set a new value.

2. **Set the new value by** pressing the button △ or ▽ until you reach the desired value and confirmed, wait 5 seconds until the sign ⏑ stops flashing. The setting range is 20°C to 80°C.

   ATTENTION The shutdown temperature value of the hot water pump can be set only by pressing the button ☐ , when the sign ⏑ appears on the screen and flashes. When the sign ⏑ does not appear on the screen, the temperature measured by the sensor is displayed on the screen.

Activation of the priority "P" mode of domestic hot water is carried out as follows:

Press the button ☐ several times until the P symbol appears on the screen and it starts flashing for 5 seconds, during this time you can set the desired value.

Next to the P symbol, **oF** (off) or **ON** (on) will be written at the touch of a button, △ or ▽ you can switch between **oF** (off) or **ON** (on).

Activation of the "L" mode of operation in the summer is carried out as follows:

Press the button ☐ several times until the symbol L appears on the screen and it starts flashing for 5 seconds, during this time you can set the desired value.

Next to the L symbol, **oF** (off) or **ON** (on) will be written by pressing the button, △ or ▽ you can switch between **oF** (off) or **ON** (on).

If mode L is turned on, then the circulation pump will be turned off. It will start only if the water temperature in the boiler (measured by sensor 2) exceeds 90°C to protect the boiler from overheating.

Regulation of hysteresis "h" (the value of the temperature difference at which the boiler pump will start) is carried out as follows:

1. Press the button ☐ several times until the h sign appears on the screen and starts flashing for 5 seconds, during this time you will be able to set a new value.
2. **Set the new value** by pressing the button △ or ▽until you reach the desired value and wait 5 seconds for the **h** sign to stop blinking. The setting range is 5°C to 30°C.

6. OPERATION OF THE CONTROLLER

Once you have set the desired values for pump start and stop temperatures and hysteresis, the controller will start working with these values in mind.

- **The controller will start the circulation pump** when the temperature measured by **sensor 1** (boiler heat temperature) is 1°C higher than the set temperature and will stop the pump when the temperature measured by the sensor is 2°C lower than the set temperature.

The pump will work if: $T_{sensor\ 1} \geq T_{set} + 1°C$ The pump will be turned off if: $T_{sensor\ 1} \leq T_{set} - 2°C$

While the pump is running, the circulation pump will display a sign ⏀ (pump symbol) in green on the screen.

- **The controller will turn on the hot water boiler supply pump** when the temperature in the storage boiler is below the temperature set by the hysteresis value (h) and will be turned off when the temperature in the boiler is higher than the temperature set for the boiler or when the heat temperature of the boiler is below the temperature of the boiler water (so that the boiler is not cooled).

The ACM pump will work if: $Tsensor_{\ 2} < Tset - h$

The ACM pump will be turned off if: $Tsensor_{\ 2} > T\text{-}set$ or $Tsensor_{\ 1} < Tsensor_{\ 2}$

While the boiler pump is working, a sign ⏀ (pump symbol) in green will appear on the screen.

To manually start the pump, regardless of the temperature measured by the sensor, simultaneously press the buttons △ and ☐ (to start the circulation pump)

or simultaneously press the buttons ▽ **and** ☐ (to turn on the boiler pump). To stop the pump and return to the automatic mode of operation (depending on temperature), simultaneously press the buttons △ and ☐ , accordingly, ▽ the buttons ☐ .

The controller will trigger an audible alarm when the measured temperature reaches 90°C to warn you that the water temperature is close to boiling.

7. TROUBLESHOOTING HOW TO RESOLVE SPECIFIC PROBLEMS

a) The controller no longer turns on or nothing appears on the screen after switching on

Check if there is power in the outlet or the fuses are not disconnected from the mains. If you have power and the controller does not work, send the controller for repair.

b) The sensor does not correctly indicate the temperature

Disconnect the sensor from the boiler pipe and check that the sensor correctly indicates the ambient temperature. Check that the sensor cable has not melted from contact with the pipe. Replace the sensor or send the controller for repair.

In the event of a failure of the temperature sensor or a break in the cable of the temperature sensor, error code 99 will be displayed.

c) The pump does not work

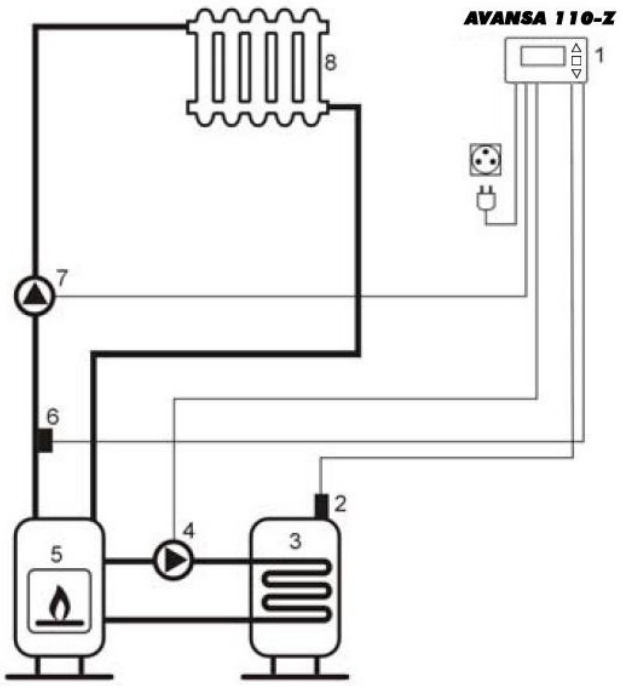
Check all cable connections, turn on the controller and make sure that the pump symbol appears on the screen. Check if the pump works directly connected to the current. Check if there is a current of 220 V at the output of the controller, when the pump symbol appears on the screen, if not, send the controller for repair.

8. SPECIFICATIONS

(a) Power supply	230V 50Hz
(b) Energy consumption	Max. 7 mA (1.6 W)
(c) Rated charging capacity	3 A
(d) Cable length:	
Controller power cable	1.5 m
Pump power cable	1.1 m
Sensor cable 2 temperature	2.5 m
1 Temperature sensor cable	1.1 m
(e) Dimensions (L x H x W)	145 x 70 x 40 mm

9. CONNECTION DIAGRAM

The diagram below is simplified (not all the elements necessary for the correct operation of the equipment)



1. ADVANCE 110-Z controller
2. Temperature sensor 2 (hot water)
3. Hot water boiler
4. Boiler pump
5. Boiler
6. Temperature sensor 1
7. Circulation pump
8. Radiator

10. PROCESSING

As a final consumer, you are obliged by law not to treat waste electrical and electronic equipment as unsorted municipal waste. When you no longer want to use this product, please do not throw it away with household waste.

As an electronic product, it can contain substances that are harmful to the environment, and as a final consumer, you have a very important role to play in the selective treatment of waste. Please return this product to the store where you purchased it (free receipt) or to any other collection centre for waste electrical and electronic equipment (WEEE). In doing so, you will comply with applicable laws and contribute to maintaining a clean environment.

WARRANTY CONDITIONS

Consumer rights are provided for in Order No. 21/1992, updated on 27.12.2008, as well as in Law No. 449/2003, regulated by O.U.G. 174/2008. The warranty on the equipment is **24 months** from the date of purchase, which is the period during which the consumer benefits from free repair or replacement of the device if a manufacturing defect is found. When purchasing a device, the consumer is obliged to check the filling of the warranty certificate with all the necessary data, the signature and seal of the seller. The seller is obliged to demonstrate the action and explain how to use it. For this, the seller, together with the buyer, will check the correct operation of the display, control buttons, as well as the general condition of the device. Before complaining that the product is damaged, check the condition of the electrical contacts, check that the installation is correct and that the problem did not arise from another part of the installation. In the event of a breakdown of the device, the buyer will take it to the store where he bought it, requesting its repair or replacement. The warranty is valid only if the device is accompanied by a warranty certificate and the tax invoice with which it was purchased, both properly filled, legible, without changes, signed and stamped. The buyer will note the alleged defect in the warranty certificate. The seller undertakes to repair or replace the damaged device within 10 days. The duration of the warranty period is extended by the time that has elapsed from the date when the buyer complained about the defect of the product until the moment when it is put back into operation.

WARRANTY CERTIFICATE

WARRANTY PERIOD : 24 MONTHS

PRODUCT: **PRETYPE** : **110-Z** SERIES: ..... YEAR:.....
INVOICE:.....
FROM:.....
BUYER:.....
.....
ADDRESS:.....
.....

The buyer automatically loses the right to the warranty if:
- The product has been transported, stored, processed or misused
- The product has been modified, has undergone unauthorized intervention, has been used without following the instructions, or if the relay contacts are blown out due to a short circuit or too much electric current.
Any unauthorized interference with the product will lead to a loss of warranty.
By signing this certificate, the buyer expresses his consent to the provisions of this document and declares that he has taken over the device in good condition, as well as the necessary documents: an invoice, a receipt and a warranty certificate.

Signature and Seller's stamp

Signature and Buyer's stamp