

RADIO FREQUENCY DIGITAL ROOM
THERMOSTAT

AVANSA 2003 TX



User manual

GENERAL NOTES

AVANSA 2003 TX Room thermostat is suitable for controlling most boilers available in Slovakia. It is possible to easily connect to boilers, or air conditioning

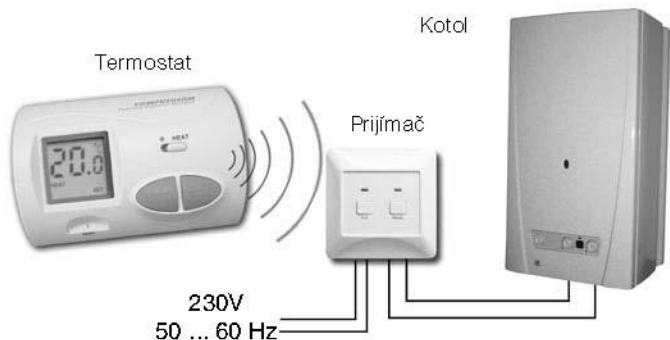
device, including a thermostat with a double lead and a connecting point, independently from or operating voltage.

The digital display compared to simple, traditional thermostats allows more precisely measurement temperature, setting

of the necessary data. Based on the selected sensitivity, the thermostat turns on the boiler below the set temperature and turns it off above the set temperature. High comfort also ensures reduced energy costs.

The device has two units. The first is a portable control unit (thermostat), the second is used to control the boiler. The units are connected by radio frequency, so no wiring is needed between the thermostat and the boiler.

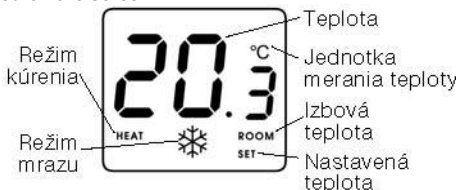
The thermostat and receiver have their own security codes, so external signals cannot interfere with their safe operation.



To increase battery life, the thermostat does not transmit continuously, but only sends a signal to the receiver when a connection must be made. The portable thermostat has the following advantages:

- Wiring is not required, which is advantageous for building modernization.
- The optimal placement of the thermostat can be chosen during operation.
- Using the thermostat is also advantageous because its location can be changed according to needs. (e.g. during the day you can place it in the living room, and at night in the bedroom).

Symbols displayed on the screen:



The thermostat has an impressive range of about 50 m in open terrain. Inside a building this distance can decrease significantly, especially if radio waves are blocked by iron or reinforced concrete structures. Sensitivity can be selected between $\pm 0.2^{\circ}\text{C}$ (basic factory setting, recommended for heating with radiators) (recommended at

for underfloor heating). This means the difference between the set and the actually measured room temperature when the thermostat is activated. If the factory setting is, for example, 20°C , the device turns on the boiler at 19.8°C or a lower temperature, or turns off the boiler at 20.2°C or a higher temperature.

1. PLACEMENT OF THE AVANSA 2003 TX DEVICE The thermostat of the device is portable and can be placed in any room of the apartment. Make sure it is not exposed to direct sunlight or drafts. Do not place it near a refrigerator or a chimney. The optimal placement is 1.5

m high from the floor of the room. It can be mounted on the wall or placed on its own feet.

IMPORTANT WARNING! If in the room where you want to place the thermostat, radiators have thermostatic heads for valves, replace the valve heads and mount a manual controller, or set them to the maximum temperature setting. Otherwise, temperature regulation may be disrupted.

2. THERMOSTAT CONNECTION Before installing and connecting the thermostat, loosen the screws at the bottom of the cover. Then remove the back cover of the thermostat as shown in the picture. Fix the back cover to the wall using the supplied screws, or place it on a bracket. The battery compartment is located on the inner



Insert 2 x AA power batteries (type LR6) into the holder according to the specified polarity. After inserting the batteries, the internal temperature set at the factory will appear on the display. (If the

information does not appear

mentioned

information, press the "RESET" button with a wooden or plastic stick. Do not use metal materials and a graphite pencil. The pencil may break and cause a short circuit in the device).

3. BASIC SETTINGS Remove the device's back cover. On the inner side of the front cover, on the base panel, there are

jumper

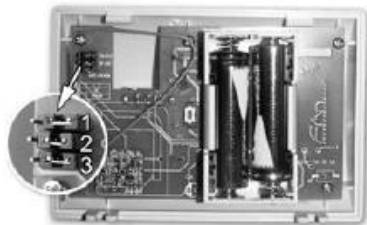
(black

plugs),

by means of

which

basic factory settings can be modified as follows.



3.1 ADJUSTING THE TURN-ON SENSITIVITY The highest jumper can be used to adjust and set the turn-on sensitivity. The turn-on sensitivity is set at the factory in the range of $\pm 0.2^{\circ}\text{C}$, which can be changed. By moving the plug to the left and middle pins, you can set the temperature in the range of $\pm 0.3^{\circ}\text{C}$.

3.2 CHANGING THE TEMPERATURE MEASUREMENT UNIT The middle jumper can be used to change the temperature measurement unit, which will appear on the display. The basic temperature setting at the factory is in $^{\circ}\text{C}$ (Celsius). By moving the plug to the left and middle pins, you can set the temperature in $^{\circ}\text{F}$ (Fahrenheit).

3.3 CHANGING THE DISPLAYED TEMPERATURE ON THE SCREEN The lower jumper can be used to set the desired temperature(s). According to the factory setting, the current room temperature is displayed on the screen, with the word "ROOM" visible in the bottom right corner of the display. The set temperature is visible only during the setting (approx. 15 seconds).

By moving the plug to the left and middle pins, you can set the device to alternately (approx. 4 seconds) display both the set and current temperature. In this alternating mode, the word "ROOM" and "SET" are alternately visible in the bottom right corner of the display, depending on whether it is the current or set temperature. Warning! If you want to modify the factory setting after inserting the batteries, press the "RESET" button with a wooden or plastic stick.

3.4 TUNING THE THERMOSTAT AND RECEIVER For safe operation, the thermostat and receiver have their own security codes. Tuning is possible after installing the receiver by pressing the "LEARN" button (see figure). The button is located next to the battery compartment. Therefore, before tuning, do not mount the thermostat's back cover on the front cover. The tuning description is given in section 7.2.

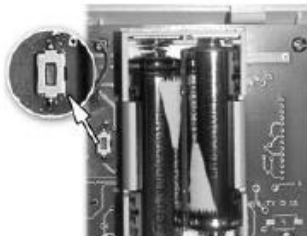
4. SETTING THE DESIRED TEMPERATURE

The sensitivity of switching on is set at the factory in the range of $\pm 0.2^{\circ}$, and the temperature value of 20°C . This means that the boiler will be switched on below 19.8°C and switched off above 20.2°C . Basic setting in factory you can

adjust to $10\text{--}30^{\circ}\text{C}$, in 0.5°C increments as follows:

- Press the button  or , the message "SET" appears on the display

(set value), while the measured temperature value will change to the factory setting (20.0°C), or to the last set value (the set temperature blinks on the display). Press the buttons (in this case the values will change faster) until you reach the required temperature you want to maintain at the thermostat installation location. Setting the desired temperature is possible in $\pm 0.5^{\circ}\text{C}$ increments. - After setting the required room temperature, the device automatically switches back to normal operation after approximately 15 seconds. The message "SET" disappears from the display and the current room temperature appears.

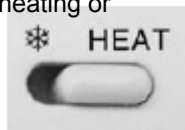


5. THERMOSTAT OPERATION

After connecting and setting the basic values, the desired temperature, the thermostat is operational. By pressing the "HEAT" button, you can select the heating or

frost mode, operation mode. The thermostat will control the heating unit according to the settings.

mode



5.1. HEATING MODE (RIGHT POSITION OF THE BUTTON)

The thermostat controls the boiler based on the actual room temperature and the set temperature. If the device is on, relay contacts 1 (NO) and 2 (COM) close, and the device connected to the thermostat is in the on state. In this case, the message "HEAT" (heating) appears on the display and the red LED on the receiver is lit.

appears on the display

5.2. FROST MODE (LEFT POSITION OF THE BUTTON) If the button is in the left position, it means you are in frost mode. The thermostat will attempt to maintain a constant temperature of $+7.0^{\circ}$. Below this value, the boiler or other connected heating device will turn on, and above this value it will turn off. In frost mode, relay contacts 1 (NO) and 2 (COM) close, and the device connected to the thermostat is in the on state. In this case, the symbol  appears on the display

temperature setting is not possible.

6. BATTERY REPLACEMENT Battery life is approximately 1 year. Low battery voltage on the display is indicated by the blinking symbol "bA". This symbol appears in place of the set temperature. If the symbol "bA" appears on the display, the batteries need to be replaced (see section 2). After replacing the batteries, the temperature must be set again, as the device switches back to the factory setting.

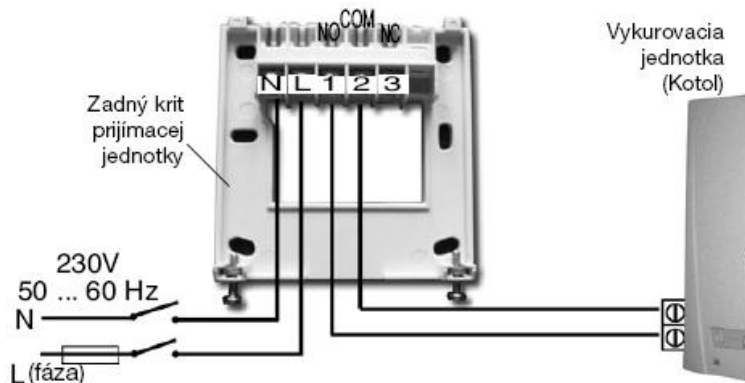
7. RECEIVER

7.1 INSTALLATION AND CONNECTION OF THE RECEIVER

Install the receiver on the wall near the boiler. The product must not get wet. Warning: Do not install the receiver under the boiler cover, as this may interfere with the radio frequency connection. For safety reasons, have the installation and connection done by a qualified technician. Loosen the 2 screws at the bottom of the receiver, but do not remove them. Then remove the front cover and, using the attached screws, fix the rear cover to the wall. The connection points above the terminals are marked as follows: N, L, 1, 2, 3.

The receiver can be connected to a 230 V mains supply. For the mains connection, we recommend fixed wiring,

instead of a 230 V socket. This prevents unexpected power outages. Connect the neutral wire to point N, and the phase wire to point L. We also recommend installing a switch to turn the receiver off.



The receiver controls the boiler via relay contacts: 1 (NO), 2 (COM), 3 (NC). Connect your heater to contacts 1 NO and 2 COM, and the cooler to contacts 2 (COM) and 3 (NC).

WARNING! When connecting the heater or cooler, always follow the manufacturer's instructions.

The voltage at terminals 1, 2, or 3 depends only on the control system, so the parameters of the used wiring are determined by the controlled device. The length of the wiring is not important; the receiver can be installed next to the boiler or at a more distant location, but not under the boiler cover. If the distance between the transmitter and the receiver is too large, the connection may be unstable, so install the receiver closer to the thermostat.

7.2 OPERATION OF THE RECEIVER Connect the receiver to the power supply and wait a moment. After a few minutes, the thermostat and receiver will be on the designated frequency. Press the button until the set temperature exceeds

the actual room temperature by 2-3°C. The display should show “HEAT”, meaning the device is activated. If this does not happen, the entire system must be re-tuned. Press the receiver's “M/A” button until (about 10 seconds) the green LED starts blinking. Then press the “LEARN” button next to the battery compartment until (a few seconds) the green LED stops blinking and turns off, so the receiver can “learn” the security code of the transmitter (thermostat). This code will not be lost even during a power outage, as the system automatically remembers it.

Warning: As a result of pressing the “LEARN” button for several seconds, the thermostat will receive a new security code, which the receiver will only recognize after re-tuning. Therefore, after successful tuning of the units, do not unnecessarily press the thermostat's “LEARN” button or the receiver's “M/A” button.

7.3 RANGE CHECK Using buttons

or you can check if the units

are within the radio frequency range. To do this, set the desired temperature higher than the current room temperature by more than 0.2 °C, then lower the current room temperature by more than 0.2°C. In the on state, the red LED lights up, in the off state this signal turns off. If the receiving unit does not receive the sent signals, the units are too far apart and need to be placed closer.

7.4 MANUAL CONTROL OF THE RECEIVER UNIT Pressing the “MANUAL” button, the thermostat disconnects from the receiver, and the boiler can be switched on only manually. In this case, temperature control cannot be performed. If the green “LED” is continuously lit, the “MANUAL” function is active. Pressing the “M/A” button repeatedly allows you to turn the boiler on or off. (If the boiler is on, the red LED is lit). Pressing the “MANUAL” button returns the thermostat to operation. (The green LED turns off).

7.5 HOW TO AVOID EXTERNAL INFLUENCES The operation of the device is not affected by any external means (radio, mobile phone, etc.). If despite this you detect a malfunction in operation, the entire system must be re-tuned according to point 7.2.

TECHNICAL DATA

Thermostat (transmitter) technical data:

-temperature measurement range:	5–35°C (in steps of 0.1°C)
-temperature setting range:	10–30°C (in steps of 0.5°C)
-measured temperature accuracy:	±0,5°C
-switching sensitivity:	±0,2/±0,3°C
-constant temperature in freeze mode:	+7°C -recommended
storage temperature:	-10°C ...+60°C
-supply voltage:	2x1.5 V batteries (LR6 type)
-operating frequency:	868,35 MHzpower: 1.5 mW
-battery life:	approx. 1 year
-dimensions:	112 x 75 x 45 mm
-weight:	154 g
-type of temperature sensor:	NTC 10kΩ ±1% at 25°C
-protection rating:	IP 30

Receiver technical data:

- power:	6W
-supply voltage:	230 V AC, 50 Hz
-supply voltage:	24V AC / DC,... 250V AC; 50Hz
-connectable current intensity:	6A (inductive load 2A)
-range of influence:	in open terrain approx. 50m
-weight:	150g