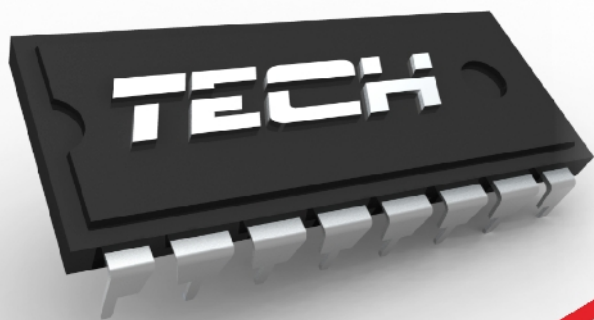
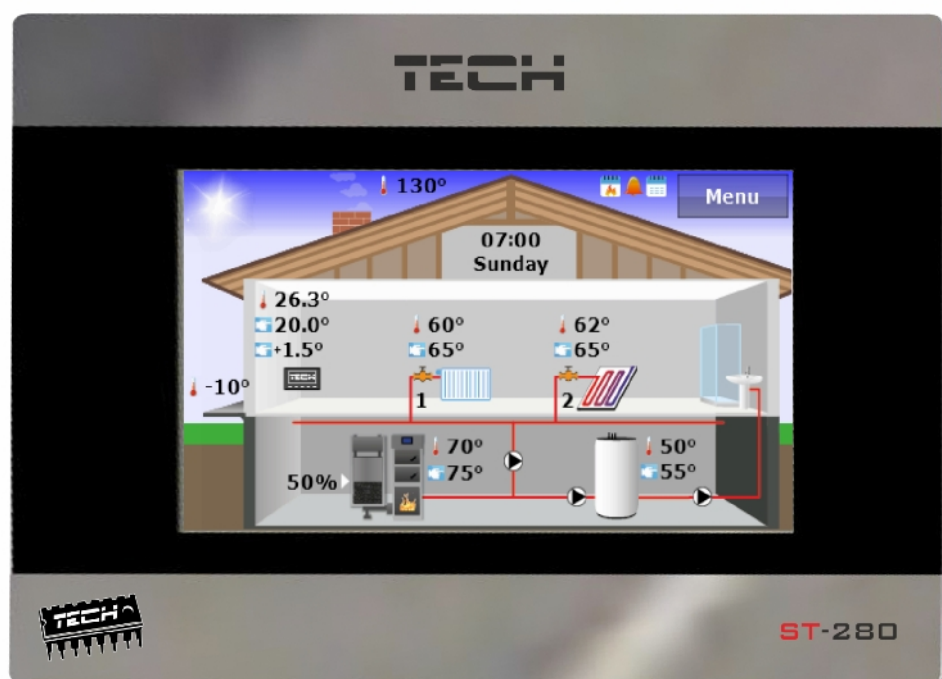




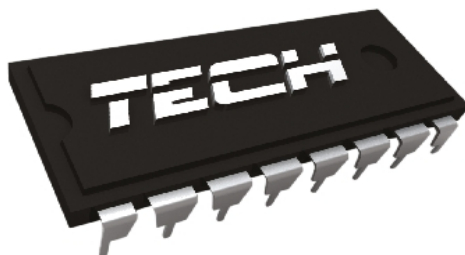
Instruction manual ST-280

Room thermostat



www.techsterowniki.pl

TECH



Declaration of Conformity no. 56/2012

We, TECH Sp.j., with our registered company office at Wieprz 1047A, 34-122 Wieprz, Poland declare under our full responsibility that the **ST-280** 230V 50Hz thermoregulator that we manufacture meets the requirements of the Directive of the Minister of Economy, Labour and Social Policy (Dz. U. /Journal of Laws/ No. 155 item 1089) of 21st August 2007 implementing the provisions of the Low Voltage Directive (LVD) 2006/95/EC of 16th January 2007.

The ST-280 controller has passed electromagnetic compatibility (EMC) tests with connections under optimal loads.

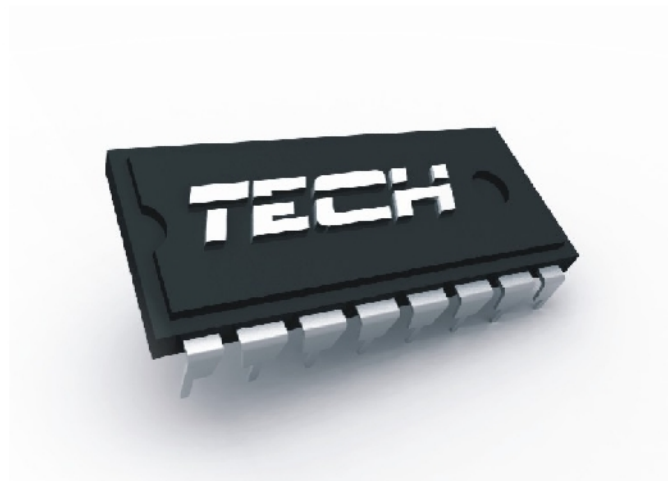
To assess its conformity the harmonized **PN-EN 60730-2-9:2006** standards were used.

Paweł Jura, Janusz Master

CAUTION!



**THE DEVICE MAY BE DAMAGED
IF STRUCK BY A LIGHTNING.
MAKE SURE IT IS UNPLUGGED
DURING STORMS**



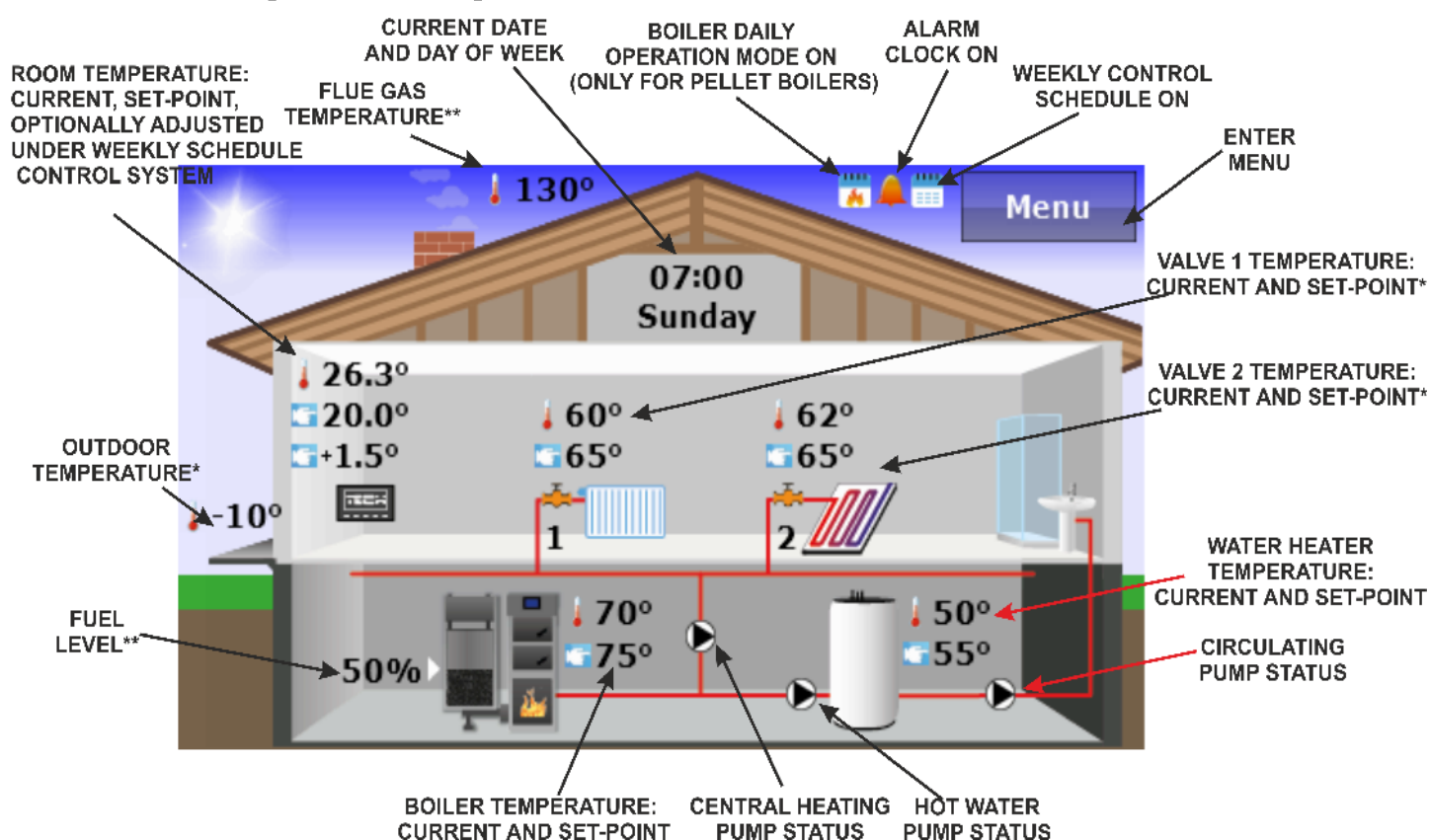
I. Use

The ST-280 universal room thermostat is designed to control and monitor room temperatures and temperatures in central heating and hot water systems. Additionally, the device can run a weekly heating program and be operated with four mixing valves (using ST-61 control modules). The device features an alarm clock, many useful settings and a parental lock to protect against unwanted changes to settings. By using the thermostat you will be able to comfortably control the temperature in your home (central heating system) and the temperature of hot water directly from your flat/house without having to walk down to the furnace room.

An easy to read large graphic display with a backlit touch screen makes it easy to read and change thermostat parameters. Other advantages of the thermostat include a design that makes it easy to mount the device on the wall, attractive appearance and reasonable pricing.

The ST-280 room thermostat works with TECH's RS communications type controllers.

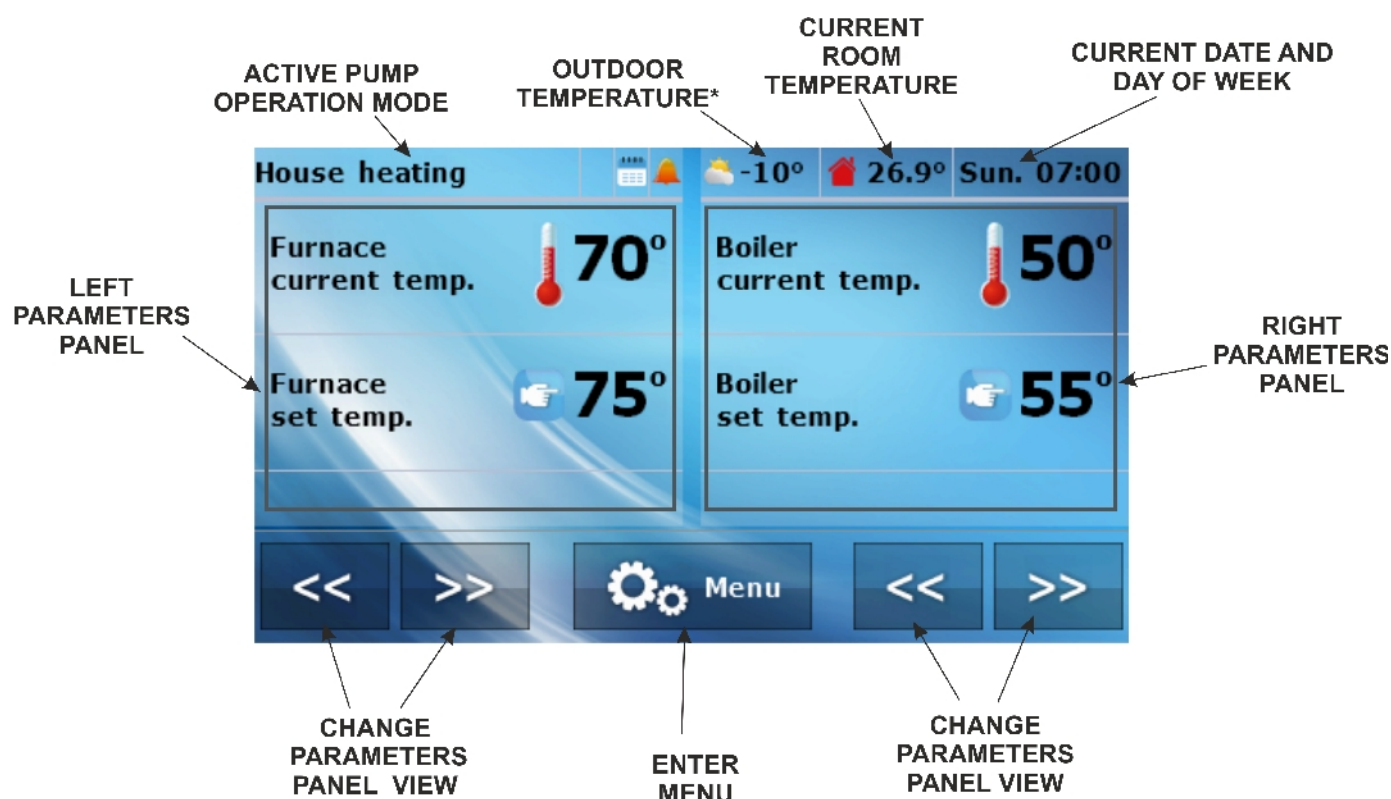
II. Principle of operation



*View active only when connected to a mixing valve.

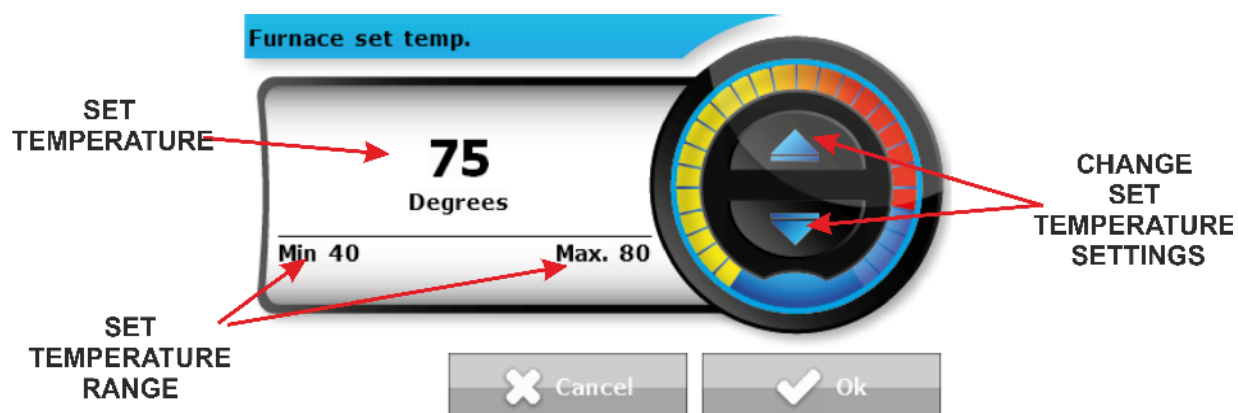
**View active only if the room thermostat receives this data from the furnace controller.

The above screen view is the default view for the ST-280 controller under its factory settings. You can change it to Panels screen:



The view can be changed with the << and >> buttons in the right or left parameters panel.

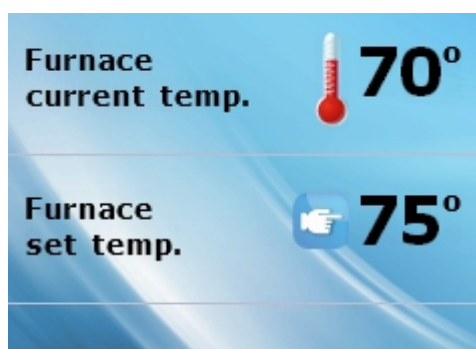
Irrespective of which screen view is set you can change temperature set-points (by pressing the temperature on the screen that you wish to change) without having to enter the controller menu.



Note: Any changes in temperature set-points, time or other settings on the room thermostat or the furnace controller will cause the new settings to appear on both devices.

Parameters panels:

View showing the current and set temperature inside the room - when you press this panel you can change the room set temperature.



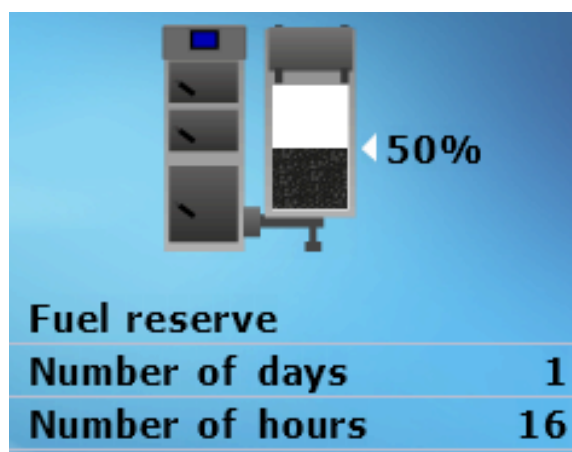
View showing the current and set temperatures of the furnace - when you press this panel you can change the furnace set temperature.



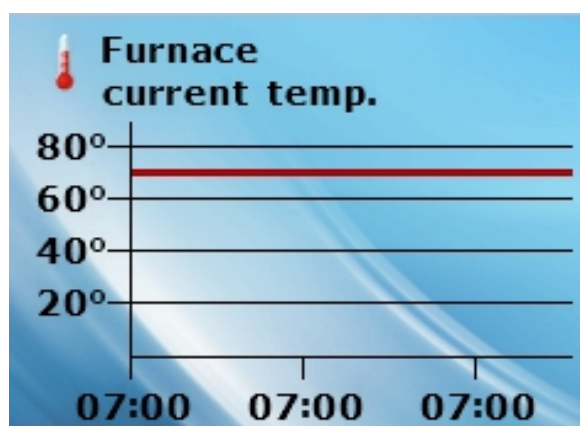
View showing the current and set temperatures of the water heater - when you press this panel you can change the water heater set temperature.

Valve 1	00150	Valve 2	00150
CH valve		Floor valve	
Opening degree	50%	Opening degree	50%
Valve current temp. 	60^o	Valve current temp. 	62^o
Valve set temp. 	65^o	Valve set temp. 	65^o

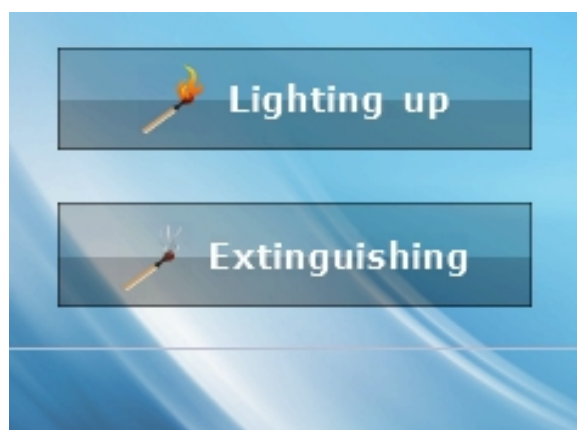
View showing the current and set temperatures of valves 1, 2, 3 and 4- when you press this panel you can change valve set temperatures.



View showing the level of fuel in the furnace (view active only when the thermostat receives such information from the furnace controller).



Graph showing the current temperatures of the furnace, water heater or inside the room. It provides graphic presentation of temperature changes over time.



View that allows you to turn off and on the furnace (view active only in the case of a pellet furnace) - When you press this panel you can turn on or off the furnace. This option is not available if the daily furnace operation mode is on and set to periodic operation.



Operation mode view - shows the active pump operation mode (view active only when a pellet furnace is used) - by pressing this panel you can change the pump operation mode. You can select any of the following pump operation modes: *home heating*, *water heater priority*, *pumps in parallel*, *summer mode with heating up* and *summer mode without heating up*. A detailed description of the pump operation modes can be found in the instructions manual of the furnace controller.

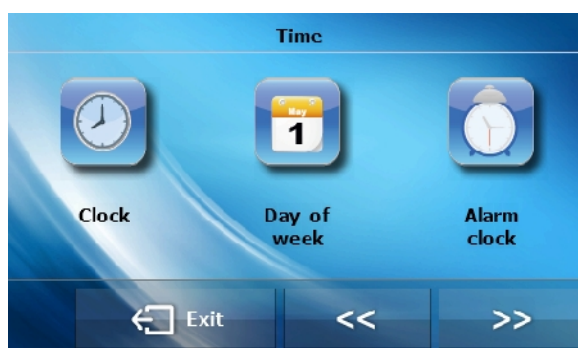
II.a) Thermostat menu

During normal operation of the thermostat the **graphic** display shows the *main page*. After pressing the menu button the user can access the individual functions of the controller. The  and  buttons are used to navigate the main menu.

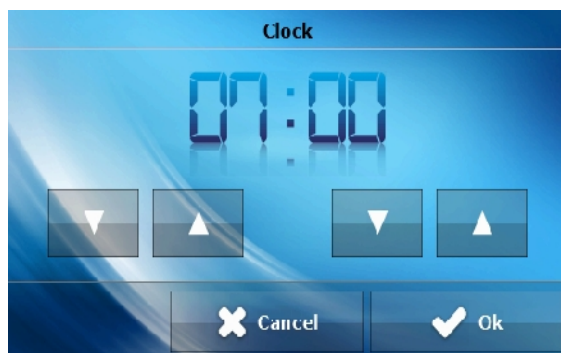
II.b) Description of controller functions

1. Time

After pressing the Time icon in the main menu a panel will be displayed that can be used to change clock settings, the current day of the week and alarm clock settings.

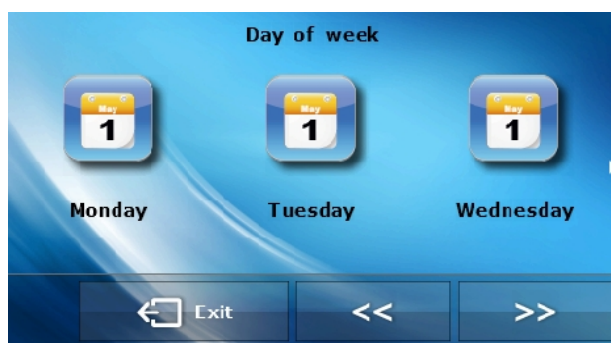


➤ Clock settings:



You can use this function to set the current time for the thermostat.

➤ Setting the current day of week:



You can use this function to set the current day for the thermostat.

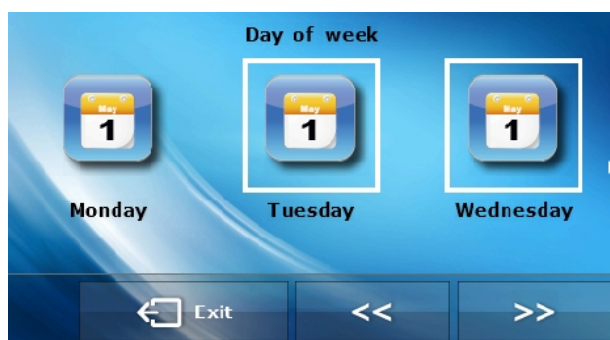
➤ Setting the alarm clock:



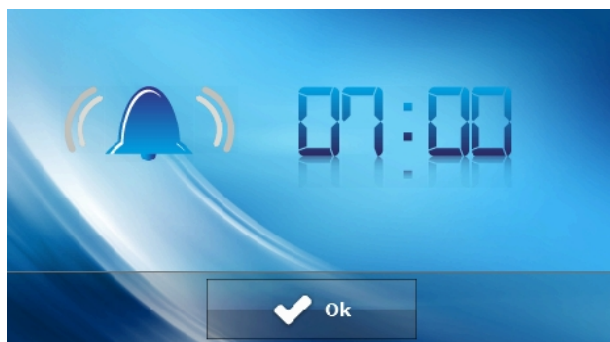
You can use this function to enter settings for the alarm clock. You can set the alarm clock to go off only on selected days of the week (active on selected days) or set it to go off once.



Use the "up" and "down" arrow keys to set your alarm time.



If the alarm is to be enabled only on selected days of the week you need to mark the days on which the alarm is to go off.



Screen appearance of the controller at the time of activation of the alarm.

2. Safety devices

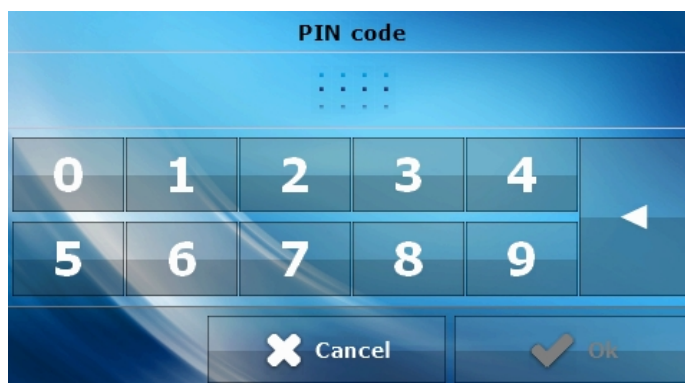
After pressing the Security icon in the main menu a panel will be displayed that can be used to change your parental lock settings.



- When you press the Auto-lock icon a panel will be shown that can be used to enable or disable the lock.



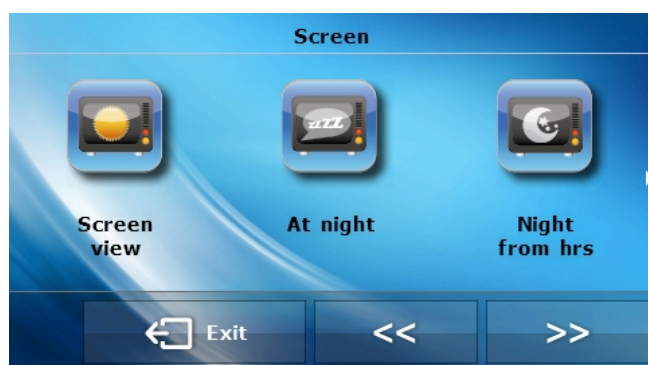
- To set your PIN code, which you will need to operate the thermostat (when the lock is enabled), press the PIN icon.



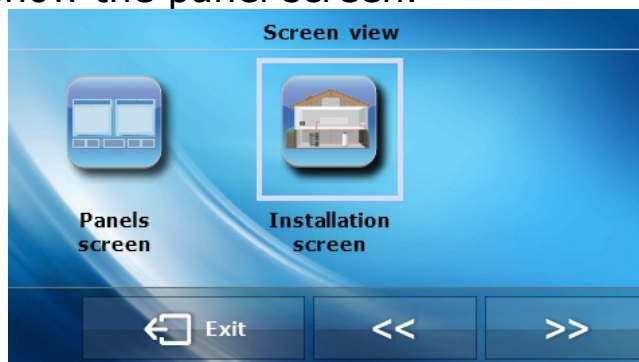
Note: Your PIN is factory preset to "0000".

3. *Screen*

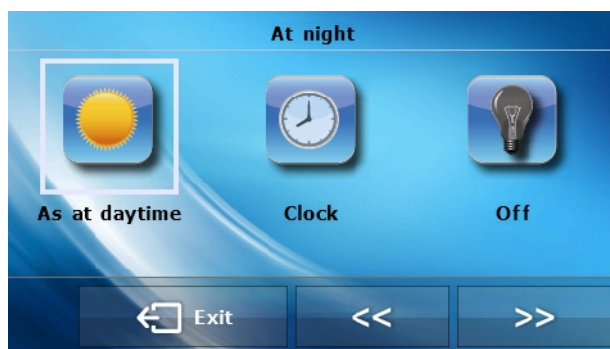
After pressing the *Screen* icon in the main menu a panel will be displayed that can be used to change your screen settings.



- Screen view - When you press the *Screen view* icon you can adjust settings that will allow you to change the appearance of the main screen. The default setting is the installation screen, but you can also set it to show the panel screen.



➤ At night



After pressing the *At night* icon a panel will be shown for adjusting the night time appearance of the screen with the following options available: *As at daytime*, *Clock* and *Off*.



Nocturnal screensaver as a clock.

- The rest of the screen menu can be used to set the times when the controller is to switch into nighttime mode (*Nighttime from*) and return to daytime mode (*Daytime from*). You can also adjust the *Daytime screen brightness* and *Nighttime screen brightness*.

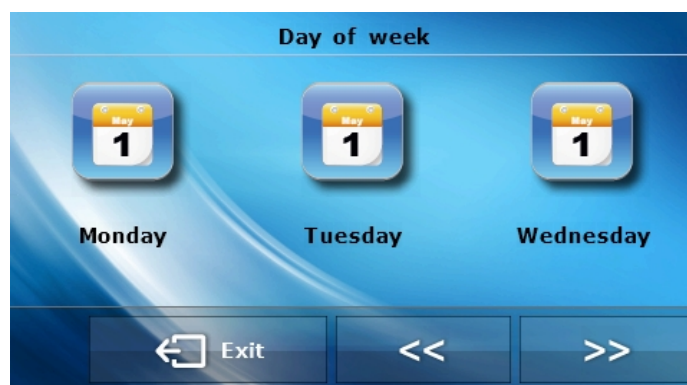
4. Weekly control - this feature allows you to change the room temperature set within 24 hour day and night cycles.



For each day of the week daily temperature deviations can be programmed with optimal values for the household members (deviation from room temperature set-point). For each day of the week you can enter any deviation with an accuracy of one hour from the main

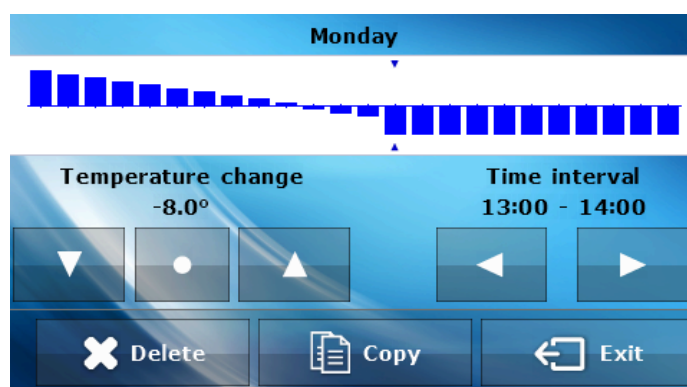
temperature set-point within a 24 hour day and night cycle.

First, select a day of the week on which hourly deviations are to be set - to do so, press the *Settings* icon and then select the day of the week for which you want to enter temperature settings.



After selecting the day of the week a panel will be displayed for setting temperature deviations at selected time intervals.

To make these settings easier you can copy a set deviation value for the next hours - just press the symbol  on your selected value and use the arrows to copy the selected setting onto the next hours.

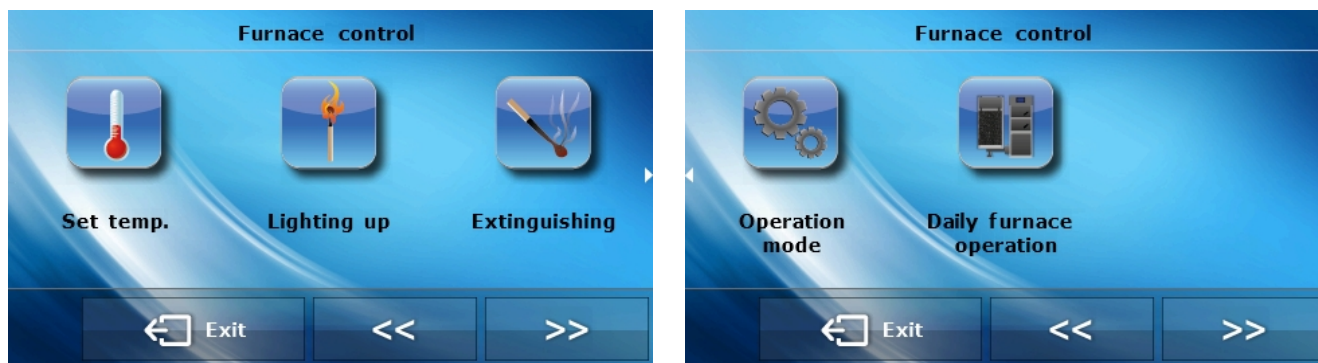


Press the *Copy* icon to copy the settings of the whole day onto the next days.



Weekly settings for set-point temperatures help reduce heating costs and ensure that your desired thermal comfort conditions can be maintained around the clock. The correct operation of this feature requires the setting of the current time and day of the week.

5. Furnace control - this function is activated only when a pellet furnace is used



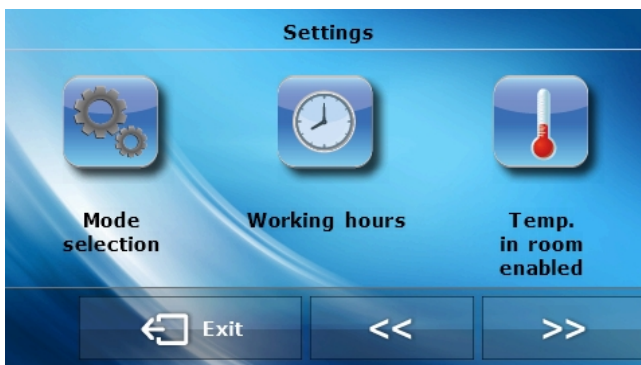
- Set temperature - press this icon to change the value of your required furnace temperature (you can also do this by clicking on the parameters view from the start screen).
- Lighting up - press this icon to start the process of firing up the furnace.
- Extinguishing - press this icon to start the process of shutting off the furnace.
- Operation mode - press this icon to easily change the pumps operations mode (in furnace controller) with the following options available: *Home heating, furnace priority, Pumps in parallel* and *Summer mode*. A detailed description of the operation modes can be found in the instructions manual of the furnace controller.



- Daily furnace operation - press this icon to set a daily schedule for the furnace:



- *Temporary operation* - select this icon to run the furnace at scheduled times
- *Continuous operation* - select this icon to run the furnace in continuous mode
- *Settings* - press this icon to program the operation of the furnace in details:

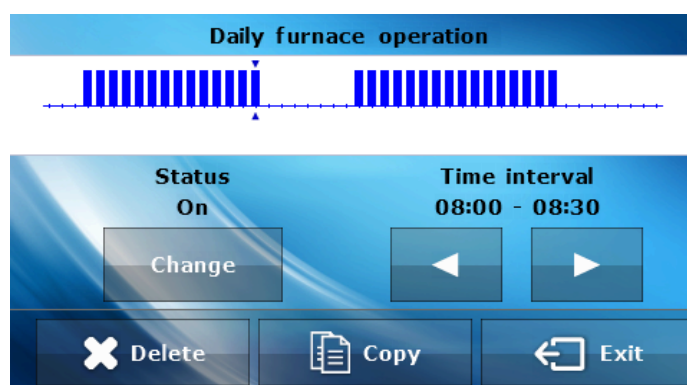


- *Mode selection.*
 - After selecting the *Only working hours* option the furnace will be switched on and off as scheduled by you.
 - If you select the *Hours operation and temperature in room* mode the furnace will be turned on depending on the actual temperature inside the room and as per the daily operation schedule of the furnace. The existing temperature inside the room will be prioritized under this mode - if the room temperature drops below a temperature threshold value (specified by the user) the furnace will be turned on even if the operation schedule specifies otherwise.



- Working hours

Press this icon to set at what times the furnace is to be on and when it is to be off (time intervals set as multiples of 30 minutes)



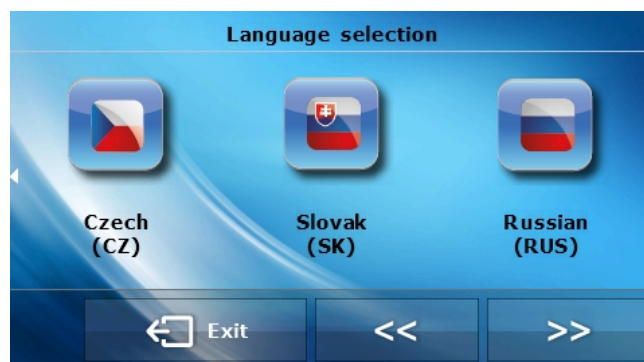
- Temp. in room enabled

After pressing this icon a panel will be displayed where you can set a threshold temperature for the room - if the temperature in the room drops below this set-point value the furnace will be turned on irrespective of your time schedule settings.

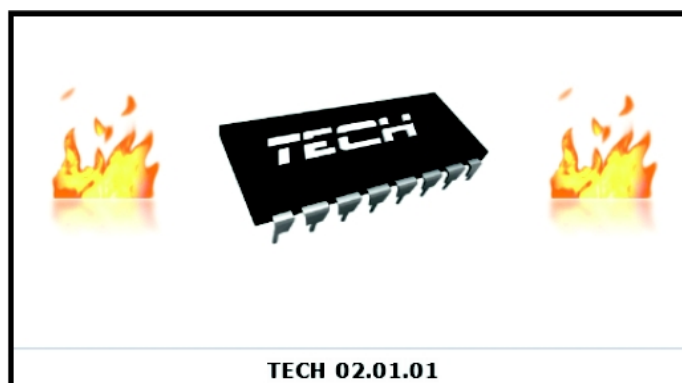
- Temp in room disabled

After pressing this icon a panel will be displayed where you can set a threshold temperature for the room - if the temperature in the room rises above this set-point value the furnace will be turned off irrespective of your time schedule settings.

6. **Language selection** press the Language selection icon in the main menu to access the user language selection panel



7. **About the program** press this icon to display the logo of the furnace manufacturer and the version of the software.



8. Settings – press this icon to change additional parameters.

- *Sensor* – after pressing this icon a panel will be displayed that allows you to change the hysteresis and calibration settings of the temperature sensor of the room thermostat.



Sensor calibration. The sensor is calibrated during installation or after prolonged use of the thermostat, if the room temperature as measured by the internal sensor deviates from the actual one. Adjustment range: between -10 and +10 °C with an accuracy of 0.1°C.

The item room temperature hysteresis allows for a tolerance for pre-set temperatures to be introduced to prevent unwanted oscillations in the event of minimal temperature fluctuations (between 0.2 and 4°C) with an accuracy of 0.1°C.

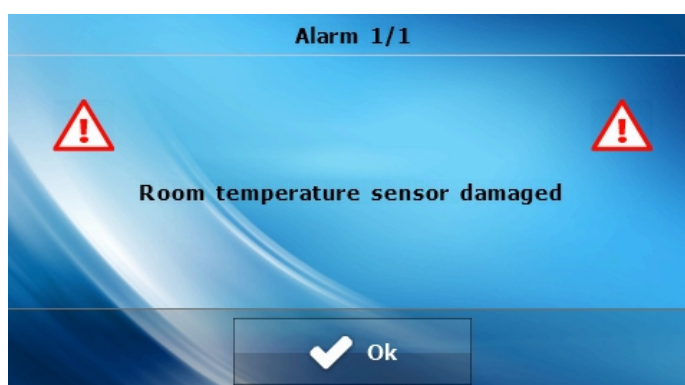
For example, when your temperature set-point is 23°C and the hysteresis value is set to 1°C the room thermostat will start to indicate room underheating after the temperature in the room drops to 22°C.

- *furnace type* - press this icon to select the type of furnace installed. The available options are standard or pellet.



III. Alarms

The ST-280 room temperature thermostat will indicate all alarms going off in the main controller of the central heating furnace. When an alarm is activated the room thermostat will sound a beep and the display will show the same message as that on the furnace controller. If the internal sensor suffers damage an alarm will be displayed saying *"Room temperature sensor damaged"*.



Technical specifications

Setting range for room temperature	5°C - 40°C
Power supply voltage	5V / DC
Power consumption	1.3W
Room temperature measurement error	+/- 0.1°C
Operating temperature	5°C - 50°C

VI. Assembly

The ST-280 room thermostat is connected to the host controller (mounted on the CH furnace) with a four-wire communication cable and the room thermostat power supply unit. The cable connections of both devices are shown in the diagram below.

RJ12 plug connector for the central heating boiler controller.



RJ12 plug connector for the room controller

Sequence of wires for connecting room un

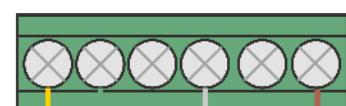
WH - white

BR - brown

GR - green

YE - yellow

Room thermostat terminal block



YE GR WH BR

5V/DC

Cable 10m

RJ12 plug connector

230V/50Hz
Mains power supply unit for room thermostat



RJ12 plug connector for the central heating boiler controller

Cable



Notatki:

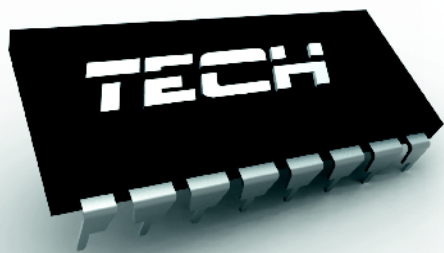
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Care for the environment is our highest priority. As a manufacturer of electronic devices we are committed to ensure disposal of end-of-life electronic devices and parts in a manner that is safe for the natural environment. Our company has a registration number assigned by the Chief Environmental Protection Inspector. The crossed-out bin symbol indicates that this product must not be disposed of into ordinary waste containers. By segregating waste intended for recycling we help save the environment. The user is required to hand over end-of-life equipment to a designated collection point for the recycling of waste from electrical and electronic equipment.

User's Manual



WWW.TECH-REG.COM

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