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Innovation Technology

U S E R   M A N U A L

Freetime Evo Radio

Daily/Weekly wireless programmable thermostat

GENERAL FEATURES

Wall-mounted and battery powered daily/weekly wireless programmable electronic thermostat, it allows to set the room temperature easily and precisely. Its main feature is the lack of electrical connections; in fact, on/off signals are transmitted to the receiving unit via radio, making the installation of this device easy and inexpensive, especially where there is no existing electrical system available. Suitable for controlling heating and cooling systems, it is equipped with a large backlit display to show all functional indications, the detected room temperature or, optionally, the current time. The room temperature is regulated on two levels: Comfort and Reduction (in accordance with the set time schedule).
The minimum settable temperature is +0,5°C (anti-frost temperature): this allows to protect your heating system from any damage due to freezing, if freetime evo is turned off. Featured with an input for the remote sensor connection, the device offers the possibility to regulate the Offset on the internal sensor or on the remote sensor. This parameter enables to correct any systematic reading errors due to the placement of freetime evo or the remote sensor, in areas which are not suitable for room temperature detection.

TECHNICAL FEATURES

Power supply:		2 x 1,5V alkaline (Type AA)
Battery life:		> 3 years
Frequency:		868,150 MHz
Modulation:		GFSK
Max. transmitted RF power:		< 1 mW
Antenna type:		Internal
Max. distance from the receiver:		> 300 m in open field or > 50 m inside buildings (it depends on building and environment)
Regulation field:	comfort:	5°C .. 40°C
	economy:	5°C .. 40°C
Type of internal sensor:		NTC 10kΩ ±1% @ 25°C beta (25-85°C) 3977 ±1%
	Range:	-10,0°C .. +50,0°C
	Precision:	±1,0°C
	Resolution:	0,1°C
Type of remote sensor (optional):		NTC 10kΩ ±1% @ 25°C beta (25-85°C) 3977 ±1%
	Range:	-10,0°C .. +60,0°C
	Precision:	±1,0°C
	Resolution:	0,1°C
Max. remote sensor wires length:		15 m
Differential:		0,0°C .. 5,0°C
Anti-frost:		0,5°C .. 25,0°C (Can be disabled)
Internal sensor Offset:		±10,0°C. (Default 0.0°C)
Remote sensor Offset:		±10,0°C. (Default 0.0°C)
Protection grade:		IP 30
Type of action:		1
Overvoltage category:		II
Pollution degree:		2
Tracking index (PTI):		175
Class of protection against electric shock:		III
Rated impulse voltage:		2500V
Number of manual cycles:		1000
Number of automatic cycles:		NO LIMIT
Software class:		A
EMC test voltage:		3V===
EMC test current:		38mA
Distances tolerances fault mode 'short' exclusion:		±0,15mm
Ball pressure test temperature:		75°C
Operating temperature:		0°C .. +40°C
Storage temperature:		-10°C .. +50°C
Humidity limits:		20% .. 80% RH non condensing
Case:	Material:	ABS+PC V0 self-extinguishing
	Color:	White

CLASSIFICATION UNDER REG. 2013.811.CE

Class: IV
Contribution to energy efficiency: 2%

SIZE

36mm   134mm   86mm
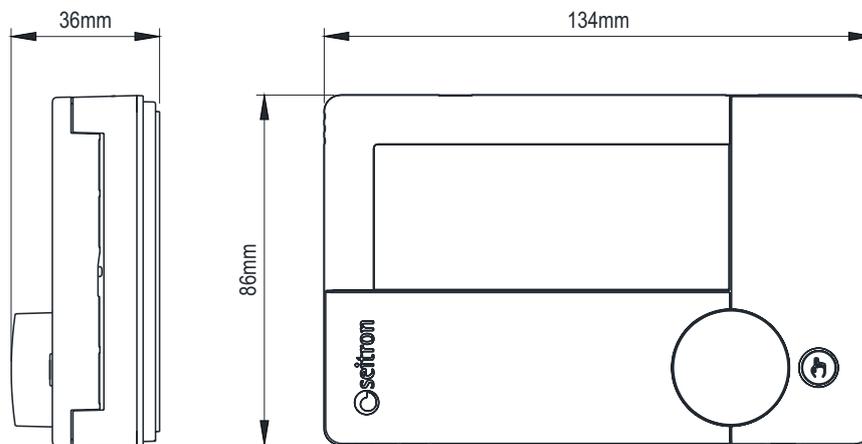
TURNING ON / OFF WITH ANTI-FREEZE MODE ACTIVATED

In order to **deactivate or activate** freetime evo, press the key" ⏻ ", The device will be in OFF condition and the display will show the writing "OFF" and the symbol " ⏻ ". If the programmable thermostat in set on winter operation mode (see user parameter PAr 6.0 H_C) and the anti-freeze mode is activated, the display shows the related symbol " ❄ " and the set anti-freeze setpoint temperature (see user parameter PAr 1.0 AFr); in this case the room temperature is regulated according to the set value for the anti-freeze parameter.

OPERATION LOGIC

On "Heating" mode, when the detected room temperature, by the internal sensor or alternatively by the remote sensor, is lower than the set one (manually or by program), freetime evo will turn on the relay to start the boiler and the symbol " 🔥 " appears on the display.
On "Cooling mode", when the detected room temperature, by the internal sensor or alternatively by the remote sensor, is higher than the set one (manually or by program), freetime evo will turn on the relay to start the cooling system and the symbol " ❄ " appears on the display.
The switch from Heating mode to Cooling mode and vice-versa is not automatic, it has to be manually set using the user parameter "H_C" (see chapter "USER PARAMETERS SETTINGS").

REMOTE ROOM SENSOR

The freetime evo has an input for connecting an optional remote probe. The remote probe can be used to detect room temperature or floor temperature or other temperature. The remote probe can be connected to sense room temperature in case the programmable thermostat needs to be installed in a location not suitable for sensing room temperature. Alternatively, the remote probe can be configured to measure floor temperature, a useful function in underfloor heating systems. In case the installation requires the installation of a remote probe, it is necessary to connect a probe with the characteristics listed in the section 'TECHNICAL FEATURES', to terminals 4 and 5 as shown in the connection diagram in the chapter 'CONNECTIONS'. If in doubt about the type of probe to be connected, please consult the manufacturer. Depending on the desired function for the remote probe, the user parameter "PAr 3.0 Entc" must be set.

TIME / TEMPERATURE DISPLAY

By pushing the knob, the current time or the detected room temperature can be alternatively displayed.
If a remote probe has been connected to detect the floor temperature and has been configured for its temperature to be shown on the display, pressing the knob will cycle between displaying Time, Room Temperature, and Floor Temperature.
The floor temperature is indicated on the display by the symbol ' 🏠 '.
The temperatures detected are shown corrected by the set Offset values (see user parameters PAr 2.0 OFS1 and/or PAr 3.0 OFS2).

WARNING:

The programmable thermostat, in order to optimize battery life, detects the room temperature every 3 minutes and, accordingly, decides on the activation or deactivation of the relay. Immediate temperature acquisition can be forced by pressing the ' OK ' button.

DISPLAY BACKLIGHT

The display backlight is turned on if a key is pressed or when the knob is rotated.
The backlight is turned off automatically 20 seconds after a key has been pushed or the knob has been rotated or pushed.

INSTALLATION

⚠️ **WARNING**

- **To properly set the room temperature, install the programmable thermostat far from heat sources, airstreams or particularly cold walls (thermal bridges).**
  If a remote sensor is used, the note is applied to the sensor and not to the programmable thermostat.
- **In order to connect the external probe use cables with minimum section of 1,5 mm² and with a maximum length of 15 m. Do not pass the cables through the pipes where the power lines run.**
- **If the load controlled by the relay of the thermostat's receiver operates with mains voltage, the connection must be made via an omnipolar switch complying with current standards and with a contact opening of at least 3 mm in each pole.**
- **Installation and electrical wirings of this appliance must be made by qualified technicians and in compliance with the current standards.**
- **Before wiring the device be sure to turn the mains power off.**

## WIRELESS SYSTEM CONFIGURATION

When freetime evo radio is purchased in bundle with its receiver, it is already factory pre-matched with its receiver.

Before installing the programmable thermostat in the desired position, it is necessary to test whether the receiving unit correctly receives its radio signals. This operation is performed by activating, on the freetime evo radio, the 'Test' mode; this function is activated by pressing the keys 'OK' and '👆' at the same time. When in 'Test' mode, the thermostat shows on the display the text 'TEST', and continuously transmits ON and OFF commands to the receiver with a pause of 2 seconds between one and the next. Everytime a command is transmitted the symbol '📡' flashes on the display and in the receiver the relay of the relevant output should continuously turn on and off every 2 seconds, the status is also indicated by the relevant Led. If this happens, the thermostat communicates correctly with the receiver. When placing the thermostat in the desired room, make sure that the two devices are still communicating properly. If the thermostat is positioned too far away from the receiver, the relay output will always remain On or Off. In this case, it is recommended that a better position is found, possibly closer to the receiver, and make sure the new position is not close to metal screens or reinforced concrete walls because this could weaken the radio transmission. The signal quality can be monitored in the receiver, see the relative documentation for further information.

The 'Test' mode can be ended by pressing the keys '⏻' or '👆' or '⏸'. In any case the 'Test' mode will end automatically after approximately 17 minutes.

If the **freetime evo radio is purchased individually,** or you intend to install it with multi-channel receivers, you must proceed to self-learn its address on the receiver by performing the 'Test' mode (described above), used in this case to self-learn the address of the programmable thermostat on the receiver. See the instructions of the receiver module for the self-learning procedure.

WIRINGS

Remote probe input

Remote probe
cable input

REMOTE
SENSOR
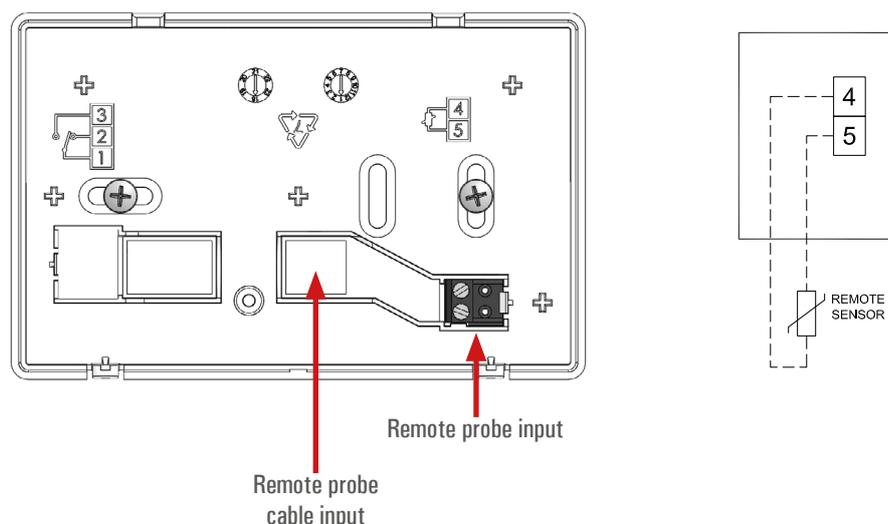
CONTROL OF A PELLET STOVE

The programmable thermostat can be set to control the room temperature by turning a pellet stove on and off.
The receiver should be connected to the stove according to the connection diagram in the receiver instruction manual.
In order to limit the number of stove on/offs, configure the following parameters as shown:

- HYSt PAr6.0:   room temperature control hysteresis at 1.0°C
- tMIn PAr8.0:   minimum relay turn-on time at 30 minutes

DCD02B2001SE 040429 281122

INSERTING / REPLACING THE BATTERIES

In order to insert / replace the batteries, proceed as follows:
1. Open the plastic slider placed on the front of the product, which gives access to the battery compartment, sliding it to the left.
2. Extract the batteries, levering with a tool if needed.
3. Insert the new batteries, respecting the polarities indicated. The batteries must be alkaline at 1.5V type AA.
4. Check the clock accuracy and, if necessary, adjust it.
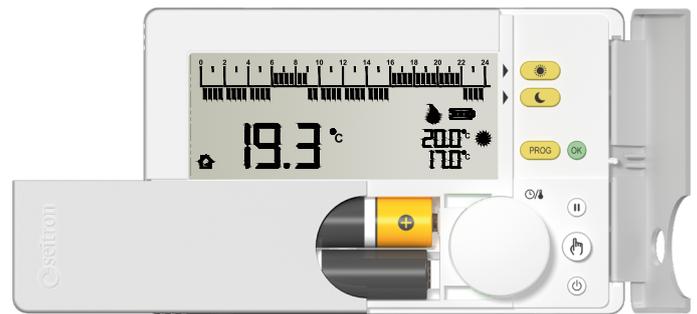
⚠ **WARNING**
- **If the batteries need to be replaced, dispose them in the special containers for recycling.**
- **Replace the batteries within a few seconds in order not to lose the set time.**

BATTERY LEVEL

The display always shows the battery life status with the symbol " ▮▮▮ ".
The battery life is full if all 3 indicators are on inside the battery symbol.
On the contrary, the batteries are low and must be replaced if the display shows the symbol " ▮ " (with only one bar left).

⚠ **WARNING**
- **If the display shows the blinking writing "bAtt" and the symbol " ☐ " (completely empty), it means that the battery power is too low to allow the device to work properly and the output will always be off.**
  In this case freetime evo won't regulate the temperature and the time schedule; the time and the detected room temperature won't be displayed.

KEYS AND KNOB FUNCTIONS

Double function key:
- Access the setting of the Comfort temperature (Set-Point).
- Setting the regulation in Comfort mode, when in "Time program setting".

Double function key:
- Short press: Enter the "Time program setting" mode.
- Pressed for 5 s: Switches from daily mode to weekly mode and vice versa.

Double function key:
- Access the setting of the Economy temperature (Set-Point).
- Setting the regulation in Economy mode, when in "Time program setting".

Double function key:
- Confirm the settings.
- Enter the clock regulation mode, when pushed for 2 sec.

Double function key:
- When operating normally, starts the "Pause" mode (temporary stand-by).
- On "Time program setting" sets the regulation mode on Off (OFF/Anti-frost).

Double function key:
- When operating normally, on each press it cycles through modes: Manual 24 hours > Permanent Manual > Automatic
- On "Time program setting" copies the time program from the current day to the next day. *

Double function key:
- Turn on / off freetime evo.
- Exit from Edit mode, when on "hourly program" or "user parameters settings".

Multi-functions knob:
- On normal operation:
  - By pushing the knob, shows the time of the detected room temperature.
  - If the backlight is off, by rotating the knob it activates the display backlight.
- On "Comfort / Economy temperature setting" (when the keys " ☀ " or " ☾ " are pressed) by rotating the knob it is possible to set the temperature of the selected mode.
- On "Hourly Program Setting", by rotating the knob towards right/left, shifts the hour-cursor through the 24 hours.
- By pushing the knob for 10 seconds, it enters the mode "Setting User Parameters" and then:
  - Rotating the knob, the display shows all the advanced parameters of freetime evo.
  - When a "User Parameter" is selected, pushing the knob it enters edit mode of the selected parameter:
    - By rotating the knob, it is possible to set the desired value/data.
    - By pushing the knob again the chosen setting is confirmed.
- On mode "Manual 24 hours" / "Manual Permanent" by rotating the knob it is possible to set the desired temperature (Set-Point) on "manual" mode.

* Valid only if the programmable thermostat has been set to "weekly mode".

The segments shows the time slot set to Comfort temperature

The segments shows the time slot set to Economy temperature
Week-day 1 Monday .. 7 Sunday*.

Time Slots
0-24 hours

Battery life indicator

Set Comfort temperature
(Setpoint)

Set Economy temperature
(Setpoint)

Time / room temperature indication

Indicates that the temperature displayed is the remote sensor temperature

Operation mode

The cursor shows the temperature which is being set.

Symbols
On the table below, are shown the symbols which can appear on the display and their meaning:

🔋	Battery life.
☀	Comfort mode temperature setting (Set-Point).
🌙	Economy mode temperature setting (Set-Point).
▶	Shows that the regulation temperature (Set-Point) is on edit mode.
❄	Anti-freeze mode activated, the display also shows the writing OFF (programmable thermostat off).
◊	Activation in heating mode (relay activated).
❄	Activation in cooling mode (relay activated).
24h 👆	Room temperature regulation in Manual mode until 24.00.
👆	Room temperature regulation in permanent Manual mode.
🔧	The programmable thermostat is on "User parameters setting" or freetime evo shows a fault condition.
⏻	Programmable thermostat off.
❚❚	Regulation interrupted (Pause mode) for less than 96 hours; when the time is finished the programmable thermostat automatically restarts.
💼	Regulation interrupted (Vacation mode) for more than 96 hours (4 days); when the time is finished the programmable thermostat automatically restarts.
🏠	The temperature shown on the display is the temperature of the remote sensor connected to terminals 4 and 5 (Floor temperature).
((•))	The thermostat is transmitting a radio command.
TEST	The thermostat is in 'Test' mode, that is, it transmits a command every 2 seconds for self-learning the radio address on the receiver.

*Valid only if the programmable thermostat has been set in "weekly programming".*

DAILY - WEEKLY PROGRAM SETTING

The programmable thermostat is set to daily mode by factory default.

To set the daily or weekly programming mode of the programmable thermostat, perform the following operations:

1. The display of the programmable thermostat shows the normal operation mode:
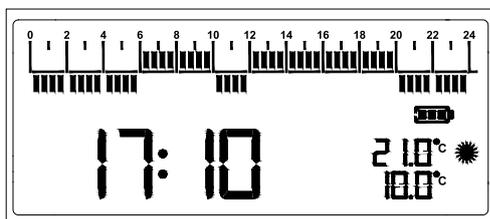
WARNING!
The access to the program setting mode IS NOT allowed on the following operations modes:
**Off, Pause, Holiday, Manual 24h, Permanent manual.**

2. Open the flap, gaining the access to the buttons.
3. Keep the " PROG " button pressed for at least 5 seconds; the programmable thermostat, depending on the initial programming mode, switches from daily mode to weekly mode or vice versa.
If the programmable thermostat is set on weekly program mode, the display shows the weekday number, placed between the segments strip and the clock / room temperature indicator.

Programmable thermostat set to weekly progrm mode
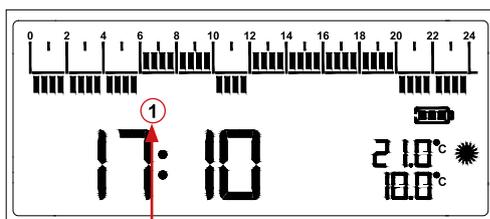
Programmable thermostat set to daily program mode

Weekday number
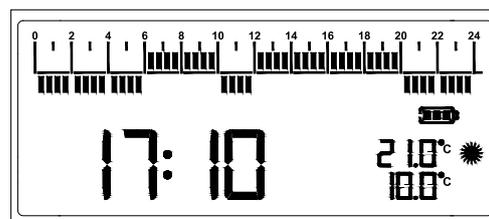
WARNING!
The first time that the programmable thermostat is set to weekly program mode, it asks to set the clock and the current day of the week (see chapter "Time - current day regulation").

TIME - CURRENT DAY REGULATION

In order to set the clock of the programmable thermostats, follow instructions below:
1. Open the flap which gives access to the buttons.
2. Push for at least 2 seconds the button " OK "; the display shows "Set CLO" and the hour digits blink.
3. Set the hours by rotating the knob (right=Increase / left=Decrease).
4. Confirm with " OK " or by pushing the knob; the minutes digits blink.
5. Set the minutes by rotating the knob (right=Increase / left=Decrease).
6. Confirm with " OK " or by pushing the knob; the weekday is blinking.
7. Set the day of the week by turning the knob (to the right = Increase / to the left = Decrease); the selected day of the week flashes (1 Monday .. 7 Sunday).
8. Confirm with " OK " or pressing the knob.

WARNING!
- **Setting the day of the week is only possible if the programmable thermostat was previously set to weekly programming.**
- **If the programmable thermostat has been set in daily programming, it will only be possible to adjust the hour and minutes.**

HEATING / COOLING SETTING

Refer to the parameter "H_C" on the section "SETTING USER PARAMETERS".

COMFORT TEMPERATURE SETTING

In order to set the Comfort temperature, follow this procedure:
1. Open the flap which gives access to the buttons.
2. Push the button " ☀ ".
3. Rotate the knob, to adjust the regulation temperature (Set-point).
4. Confirm the set value with " OK " or pushing the knob.

20.3 °C   ▸20.0°C ☀
            19.0°C ☾
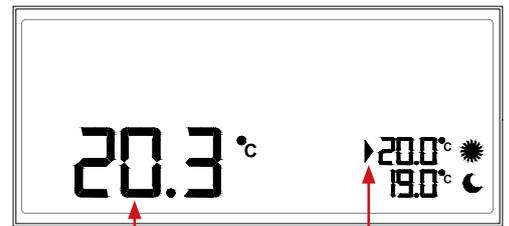
This is the room temperature value detected by the internal / remote sensor.

The arrow, placed near the comfort Set-point temperature, blinks indicating the edit mode.

ECONOMY TEMPERATURE SETTING

In order to set the Economy temperature, follow this procedure:
1. Open the flap which gives access to the buttons.
2. Push the button " ☾ ".
3. Rotate the knob, to adjust the regulation temperature (Set-point).
4. Confirm the set value with " OK " or pushing the knob.

⚠ WARNING

Normally, in order to get a temperature decrease, the Economy temperature must be set to a lower value than the Comfort temperature.
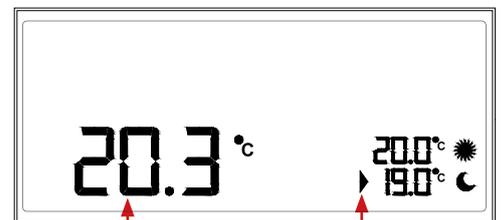
20.3 °C   20.0°C ☀
          ▸19.0°C ☾

This is the room temperature value detected by the internal / remote sensor.

The arrow, placed near the economy Set-point temperature, blinks indicating the edit mode.

DAILY TIME PROGRAM SETTING

During the normal operation, the upper and lower segments strip of the display show the regulation mode of freetime evo, which allows to customize the daily time program according to each proper need.

The upper segments strip shows the temperature regulation on Comfort mode, while the lower one shows the temperature regulation on Economy.

The default time program is shown below:
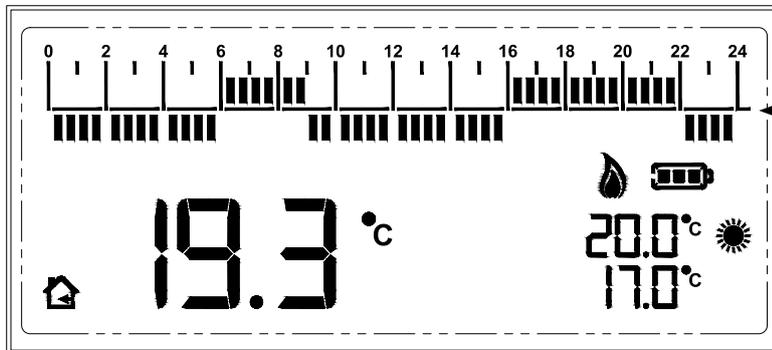
FACTORY SETTINGS (DEFAULT)	
TIME SLOT	REGULATION MODE
00:00 .. 06:00	*Economy*
06:00 .. 09:00	Comfort
09:00 .. 16:00	*Economy*
16:00 .. 22:00	Comfort
22:00 .. 24:00	*Economy*

TIME SCHEDULE EDITING - BRIEF DESCRIPTION

First segment blinking

Hours corresponding to the shown segment on the histogram

It shows that the "hourly program" mode is active

Temperature regulation mode set for the selected half hour:
" ☀ ": Comfort mode
" ☾ ": Economy mode
" 🛡 ": OFF/Anti-frost mode
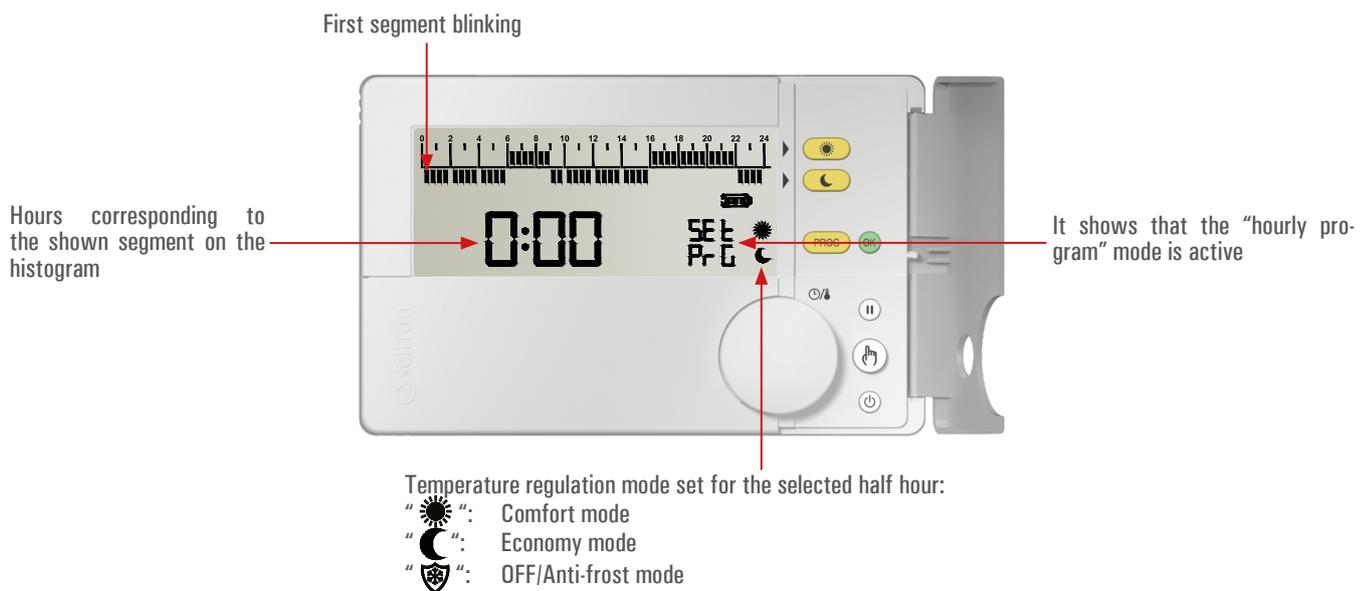
Push " PROG " to enter the editing of the time program.

Turn the knob to select the time from which you want to change the time program.

Rotate the knob to select the desired time without modifying the default time program.

Push " ☀ " to set the comfort mode (on the time histogram bar it is shown the segment on the upper strip).
Push " ☾ " to set the economy mode (on the time histogram bar it is shown the segment on the lower strip).
Push " ∥ " to set the Off Mode (OFF/Antifrost) (NO segment is displayed on the time histogram bar).
At every push of the button " ☀ " or " ☾ " the clock moves on the next half hour.

Every segment, shown on the time histogram, represents half an hour.

Set the desired mode for the next half hours up to complete the entire day by repeatedly pressing " ☀ " or " ☾ " or " ∥ ".

In order to confirm the changes, push the knob or wait 10 seconds without pushing any button.

In order to cancel the modifications, reset to the last time schedule set and exit from "Time schedule" edit mode, push the button " ⏻ ".

WEEKLY TIME PROGRAM SETTING

During the normal operation, the upper and lower segments strip of the display show the regulation mode of freetime evo, which allows to customize the daily time program according to each proper need.

The upper segments strip shows the temperature regulation on Comfort mode, while the lower one shows the temperature regulation on Economy.

The default time program is shown below:
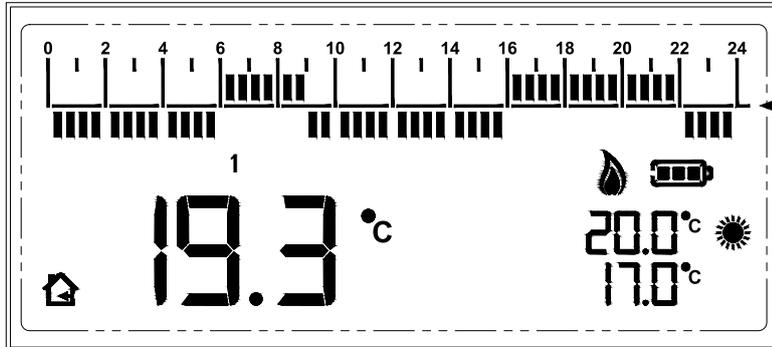
FACTORY SETTINGS (DEFAULT)	
MONDAY .. FRIDAY	
TIME SLOT	REGULATION MODE
00:00 .. 06:00	Economy
06:00 .. 09:00	Comfort
09:00 .. 16:00	Economy
16:00 .. 22:00	Comfort
22:00 .. 24:00	Economy
SATURDAY .. SUNDAY	
TIME SLOT	REGULATION MODE
00:00 .. 08:00	Economy
08:00 .. 23:00	Comfort
23:00 .. 24:00	Economy

TIME SCHEDULE EDITING - BRIEF DESCRIPTION

First segment blinking

Hours corresponding to the shown segment on the histogram

It shows that the "hourly program" mode is active

Temperature regulation mode set for the selected half hour:
" ☀ ":   Comfort mode
" ☾ ":   Economy mode
" 🛡 ":   OFF/Antifrost mode
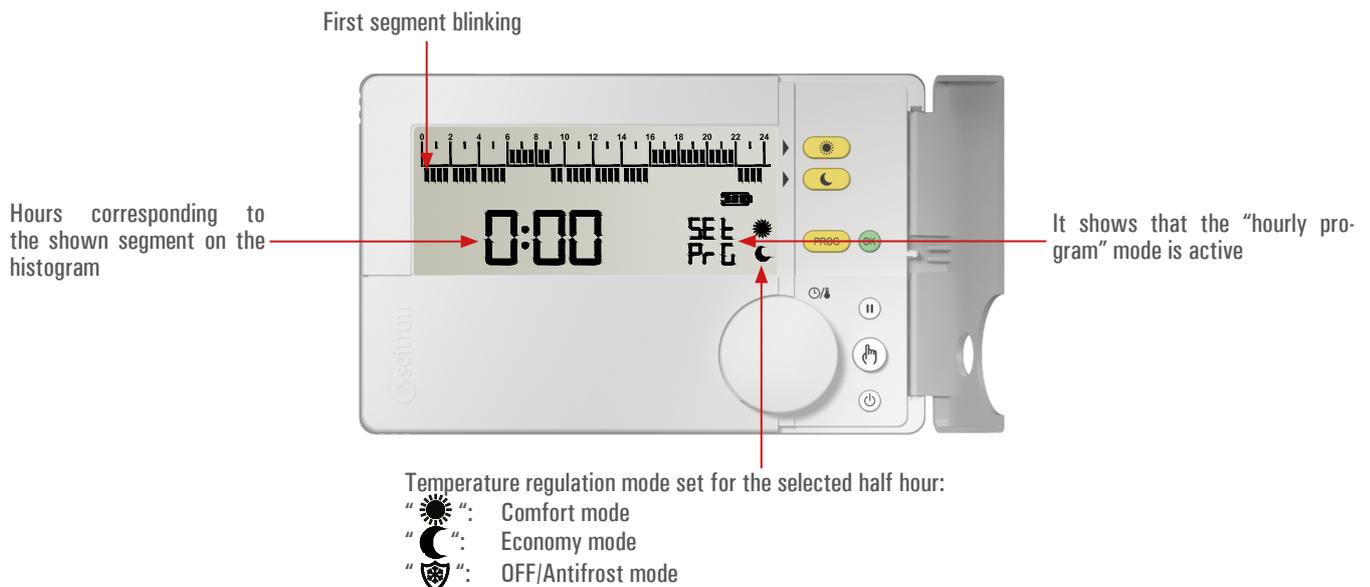
Push " PROG " to enter the editing of the time program.

The display shows the flashing number 1 (1 = Monday); if you do not want to modify this day, press the button " OK " to go to the next day.

Once the day to be set is selected, rotate the knob to select the time from which you want to change the time program.

Push " ☀ " to set the comfort mode (on the time histogram bar it is shown the segment on the upper strip).

Push " ☾ " to set the economy mode (on the time histogram bar it is shown the segment on the lower strip).

Push " II " to set the Off mode (OFF/Antifrost) (NO segment is displayed on the time histogram bar).

At every push of the button " ☀ " or " ☾ " or " II " the clock moves on the next half hour.

Every segment, shown on the time histogram, represents half an hour.

Select the required mode for the next half hours until the entire day is completed by repeatedly pushing the button " ☀ " or " ☾ " or " II ".

Once the daily program is completed, proceed as follows:

Push the button " ✋ " in order to **copy the program** of the current day on the next one. **By pushing the key " ✋ ", the programmable thermostat automatically stores** the program of the current day and proceeds to the next day program by coping the hourly schedule of the previous day.

or

Push the knob or the key " (OK) " in order to confirm the settings made; *on the contrary, press the key " (⏻) " to reset the last stored hourly schedule and exit from the "Time schedule" mode.*

Warning: By pressing the knob or the key " (OK) " the time schedule settings for the current day are confirmed.

The display shows the hourly program of the next day; repeat the procedure for the following days.

Once the program is set for the whole week, push the knob or the key " (OK) " or " (👆) " or wait 40 seconds without pushing any button in order to confirm the settings made.

Programming example Monday-Friday and Saturday-Sunday

If you want to set the same time program from Monday to Friday:

1. **set the schedule for Monday, press the " (👆) " button 4 times in order to copy the same program on every day until Friday, save Friday pressing the "OK" button.**
2. **set Saturday, press the button " (👆) " to copy the same program on Sunday, confirm Sunday pressing the button " (OK) " or " (👆) ".**

TIME SCHEDULE SHARING WITH OTHER WIRELESS THERMOSTATS

In a system made by one programmable thermostat and some more plain thermostats one in each room, it is possible to make the thermostats regulate according to the time schedule programmed in the programmable thermostat.

This can be achieved using a multi-channel receiver and associating the outputs driven by the thermostats to the output driven by the programmable thermostat. In this way a programmable thermostat and the thermostats associated with it will form a 'zone'. For example, in a home, it would be possible to create the 'living zone' and the 'bedroom zone', with temperature regulation in each room according to different time schedules programmed on two different programmable thermostats.

See the receiver's documentation for instruction how to associate outputs. In the receiver, associated channels will receive from the programmable thermostat the time slot information and therefore the information of which setpoint temperature, comfort or economy, to use for the regulation. Also the off or antifreeze states are received by the associated thermostats. If the programmable thermostat is regulating a comfort temperature, the associated thermostats will regulate according to their setpoint knob temperature, instead if the programmable thermostat is regulating an economy temperature, the associated thermostats will regulate according to a reduction temperature which can be adjusted in the receiver.

Likewise if the device is off with 5°C antifreeze function, also the associated thermostats will regulate a 5°C antifreeze temperature.

PROGRAMMING EXAMPLE:

1.

During normal operation, **push " PROG "** to enter the **time schedule edit mode**.

2.

The display shows:
- "SEt PrG" to indicate the access to the edit mode of the time schedule.
- Number 1 is blinking and it corresponds to Monday. *Valid only if the programmable thermostat has been configured in "weekly programming".*
- Hour 0:00.
- The blinking segment corresponds to hour 0:00.
- The symbol " ☾ " to indicate the regulation mode which has been set.

The time schedule is set starting from hour 0:00 towards 24:00, with steps of 30 minutes.

3.
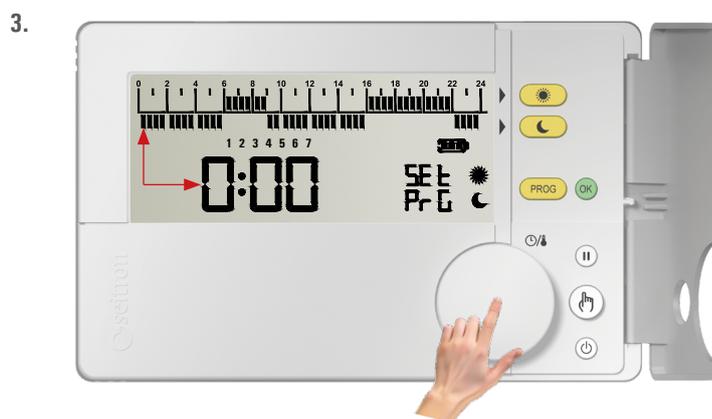
By pressing the knob or the key " OK " the selection of the day of the week is moved *WITHOUT modifying the previously set time program.*

Valid only if the programmable thermostat has been configured in "weekly programming".

4.
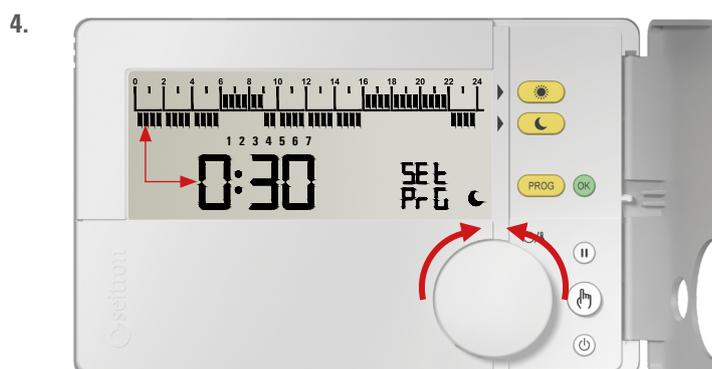
The time cursor is moved **by turning the knob,** without modifying the previously set time schedule.
The corresponding segment will blink at the selected half hour.

5. After selecting the time from which you intend to modify the time schedule (in this case, from 5:00), proceed as follows:

Push " ☀ " to set the **comfort mode** (on the time histogram, a segment is shown on the upper strip).

⚠ **WARNING**
- **In order to set the economy mode push " 🌙 ".**
- **To set the "Pause" mode (temporary stand-by) press " ‖ ".**
- **At every push of the button " ☀ " or " 🌙 " or " ‖ " the time cursor automatically shifts on the next half hour.**

6.

Push again " ☀ " to set the **comfort mode** (on the time histogram, a segment is shown on the upper strip).

7.
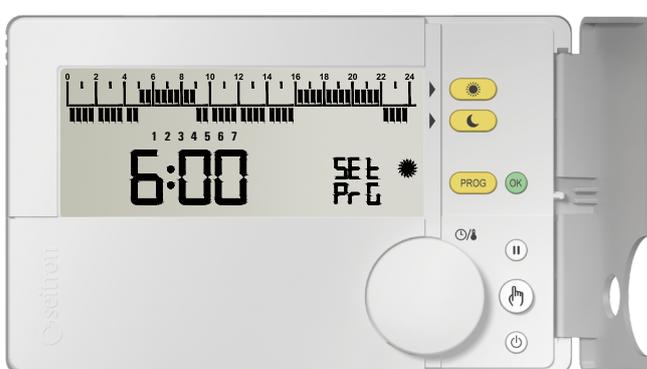
Continue with the setting as shown in this example (points 4 and 5), until the entire daily time slot is done. On the opposite case, go to the next step.
Otherwise, or at the end of the programming of the entire daily strip, go to the points:

9 *If the programmable thermostat has been set on "Daily programming mode".*

8 *If the programmable thermostat has been set on "Weekly programming mode" and it is required to set the time schedule by copying the time schedule set for the selected day.*

8a *If the programmable thermostat has been set on "Weekly programming mode" and it is required to set the time schedule manually.*

8

When the setting for the current day is over, press the button " ✋ " in order to **copy the program** of the current day onto the next.
If the " ✋ " key is pressed, it automatically stores the current day program and it goes directly to the next day program by copying the time schedule of the previous day.
There is one exception related to day 7 of the week (Sunday) and this exception is that the pressure of the " ✋ " button, exits from the programming phase storing the settings made.

Valid only if the programmable thermostat has been configured in "weekly programming".

8a.
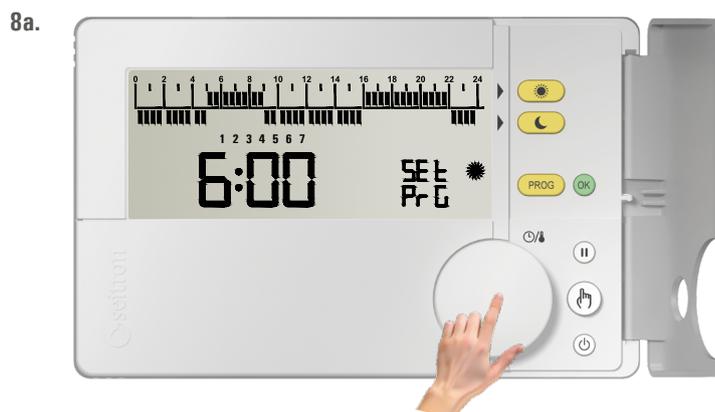
In order to store the set time schedule and go to the time schedule of the next day, press the knob or the " OK " button.

Valid only if the programmable thermostat has been configured in "weekly programming".

8b.
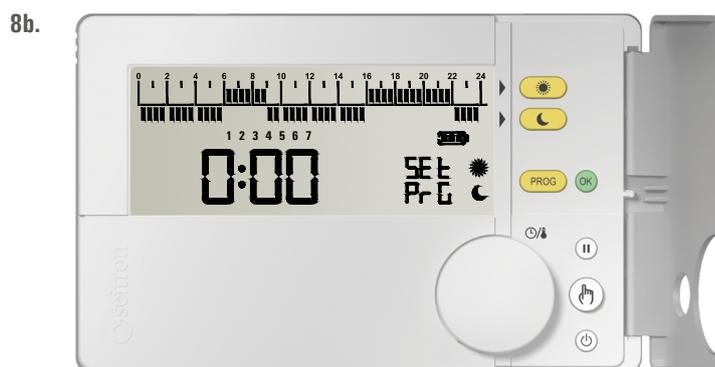
Keep going with the setting of the time schedule as shown in this example (points 3 and 8), up to finish the entire week.

Valid only if the programmable thermostat has been configured in "weekly programming".

9.

In order to store the set time schedule and **exit** from the mode "Time Schedule" **push the knob** or the button " OK " or wait 10 seconds without pushing any button.

In order to cancel the modifications done, thus restoring the last time program set up, and to exit the "Hourly Schedule" mode, **push the button** " ⏻ ".

10.
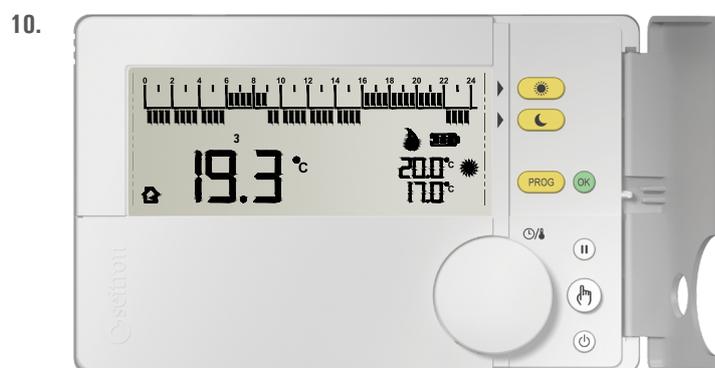
⚠️ **WARNING**
- **If it is needed to restore the default time schedule, it is necessary to access the user parameter PAR 9.0 "dFLt" (set default data); in this case all the user parameters will be restored to factory values.**
- **The access to the time program setting IS NOT allowed on the following operational conditions: Off, Pause, Holiday, Manual 24h, Manual permanent**
- **When on time schedule setting, by pressing the knob or the button " OK " or by waiting 40 seconds without pressing any button, all the changes made are stored.**

MANUAL OPERATION MODE

With the button " 👆 ", freetime evo can be forced to regulate the room temperature independently from the time program.

On manual operation mode the temperature regulation (Set-Point) can be modified at any time by turning the knob and it is independent from the Comfort and Economy temperature of the time program.

By repeatedly pressing the button " 👆 ", you can alterne between Automatic (normal operation) and Manual 24 hours, from Manual 24 hours to Manual Permanent, and from Manual Permanent it goes back to Automatic.

During manual operation mode the display will not show the time schedule, instead it will only show the room temperature, the relay status (possible symbols " 🔥 " or " ❄ " are lit), the symbol " 👆24h " (manual 24h) or " 👆 " (manual permanent) and the "Manual" Set-Point temperature.

1.
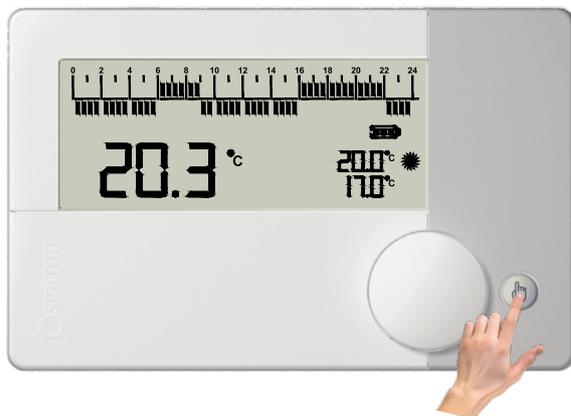
By pressing only once the button " 👆 " **Manual 24 hours mode is activated.**

2.

The display shows the symbol " 👆24h " (manual 24h); freetime evo remains on manual until 23:59 of the current day, after which it returns to Automatic mode.

Note: If Manual 24h mode is active and the Vacation mode is activated, when the Vacation setting expires and if it is past the 23.59, the programmable thermostat will go back to Automatic operation following the set time schedule.

By pushing a **second time the button** " 👆 " the operation is forced on **Manual Permanent**.

3.
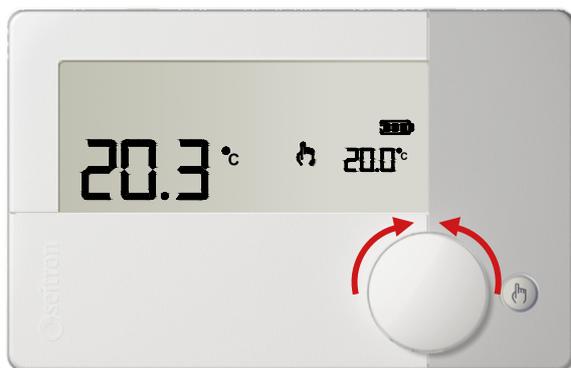
The display shows the symbol " 👆 " (manual permanent); freetime evo regulates the temperature on manual mode until the button " 👆 " is pushed again.

During manual operation (" 👆24h " or " 👆 ") **by turning the knob** it is possible to set the desired **"manual" Set-point temperature**, inside the range 5.0 .. 40°C.

4.
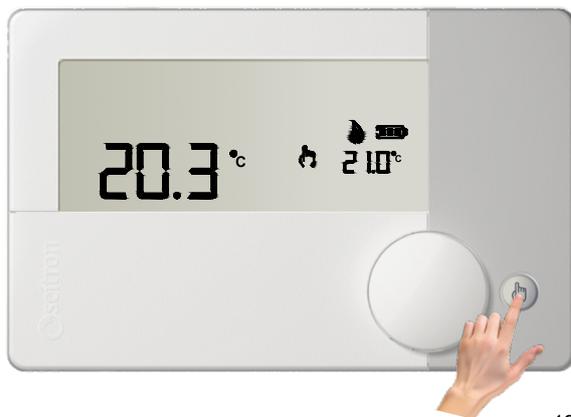
Pressing **the button once again** " 👆 " freetime evo goes back to **automatic operation mode** (normal operation according to the set time schedule).

OPEARATION MODE ON PAUSE / VACATION

By pressing the button " ⏸ ", freetime evo stops the room temperature regulation taking itself on "Pause" or "Vacation" mode depending on the time set rotating the knob:

Pause: time set less than 96 hours
Vacation: time set more than 4 days (96 hours)

This mode activates (by pushing the knob) a countdown time. When the countdown expires, freetime evo is reset to the previously set operation mode.

1.

2.

Hours indication (h).
Number of hours.

Pause mode indicator.
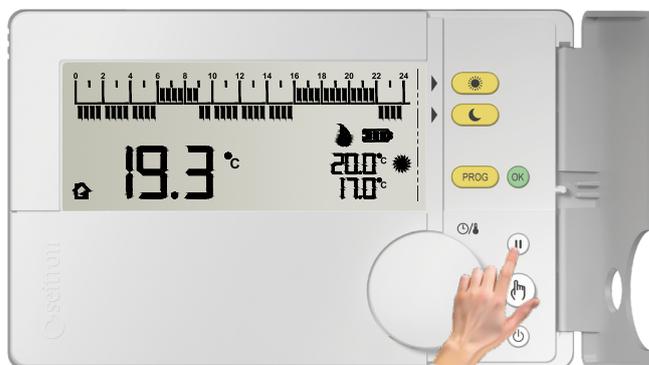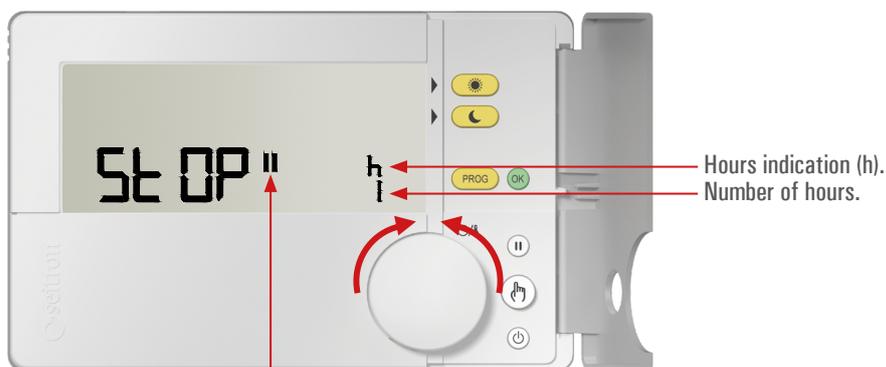
Days indication (d).
Number of days.
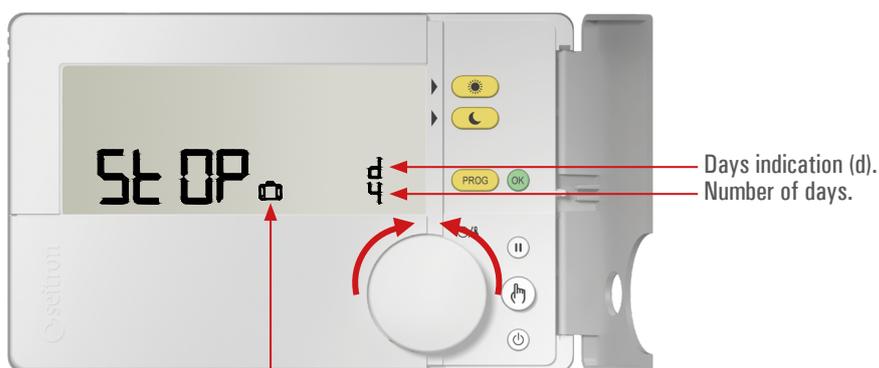
Vacation mode indicator.

NOTE:
- **Turn the knob to set the Pause (h) hours or the Vacation (d) days:**
    - **From 1 to 95 hours the display shows the symbol " ‖ " to indicate the "Pause" mode.**
    - **From 4 to 99 days the display shows the symbol " 🧳 " to indicate the "Vacation" mode.**
- **The symbols blink indicating that the countdown is still to be confirmed.**

3.

In order to start the "Pause" or "Vacation" mode, **push the knob** or the button **"** OK **" or wait 10 seconds.**
The symbols " ❙❙ " or " 🧳 " **are still lit** and freetime evo starts the countdown.

4.

To exit the "Pause" or "Vacation" mode, **push** at any time the button " ⏻ " or " ❙❙ ".

5.
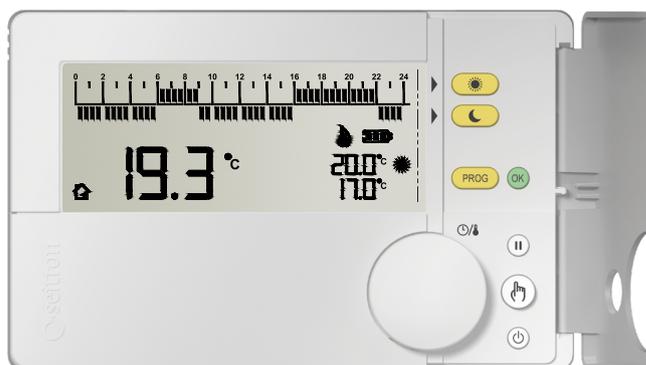
When the countdown is over, freetime evo exits from the "Pause" or "Vacation" mode and **resumes the previous operation mode**.

USER PARAMETERS SETTING

On the menu "User parameters" it is possible to configure all freetime evo radio settings.
Below, there is the sequence to enter the view and/or edit mode of user parameters.

1.

From the normal operation screen,
keep the knob pressed for more than 10 seconds.

Name of the parameter

The icon shows that the user
parameters menu is entered.

Number of the selected
parameter.

2.
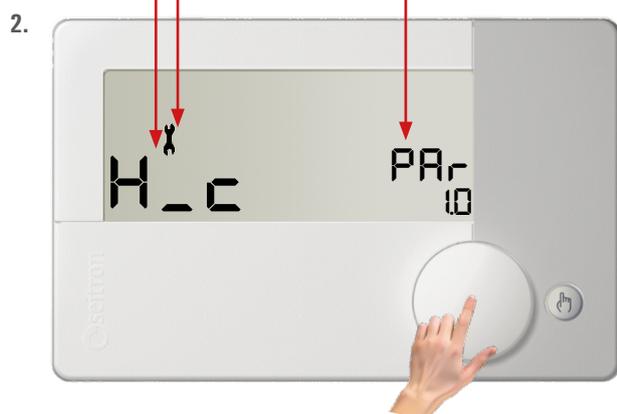
The display shows the first user parameter.

3.
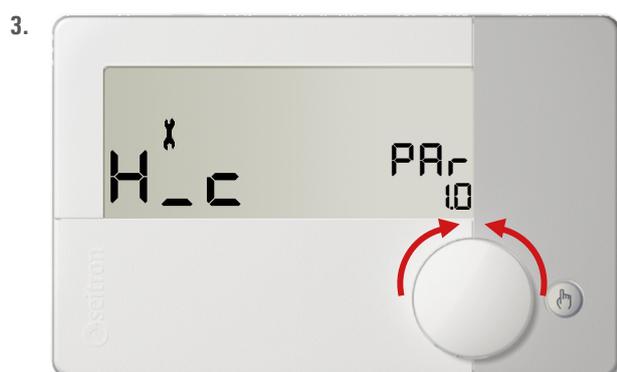
Turning the knob scrolls through the 16 available user parameters:

H_C	PAr 1.0	
AFr	PAr 2.0	
Entc	PAr 3.0	
	LinF	PAr 3.1
	LSUP	PAr 3.2
OFS1	PAr 4.0	
OFS2	PAr 5.0	
HYSt	PAr 6.0	
tPI	PAr 7.0	
	bP	PAr 7.1
	tInt	PAr 7.2
	PCYC	PAr 7.3
	PMIn	PAr 7.4
tMIn	PAr 8.0	
EOrM	PAr 9.0	
dFLt	PAr 10.0	

4.

Push the knob or the button " OK " to edit the parameter shown on the display.

5.
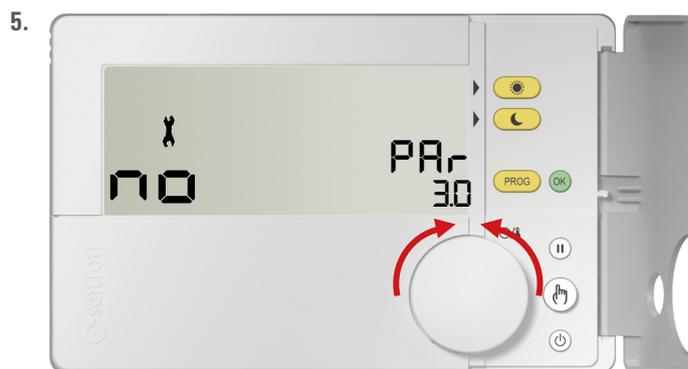
The display shows the value set on the specific parameter.
Turn the knob clockwise or anti-clockwise to modify the parameters value.
Every change is automatically stored in memory.

6.

Push the knob or the button " OK " in order to exit the edit mode of the selected parameter.
To **continue** the configuration of the other parameters **repeat from point 3.**

7.
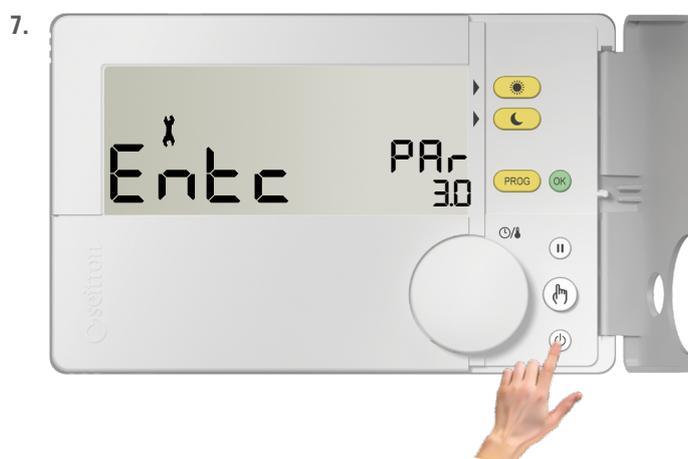
To exit the configuration of the user parameters, **push** the button " ⏻ " or wait 30 seconds without pushing any button / knob.

⚠ **WARNING**

- After 30 seconds of inactivity on the keys and/or on the knob, the programmable thermostat exits from user parameters setting mode and the display goes back to the normal operation screen.
  Every change is automatically stored even if the button " ⏻ " is pushed.

USER PARAMETERS DETAILS

Below, there is a detailed explanation on each single "User parameter".

"H_C PAr 1.0" HEATING/COOLING SETTING
This setting allows you to reverse the operating logic of the relay depending on whether you are driving a heating or cooling device.

This parameter can be set between:
"HEAt": Heating
"COOL": Cooling

The programmable thermostat is, by factory default, set to heating mode.

"AFr PAr 2.0" ANTI-FREEZE SETTING
The Anti-freeze mode allows you to select a minimum temperature to be maintained when the programmable thermostat is off, so as to protect both the room and the equipment when the room temperature falls below the set value.
The parameter can be set in the range OFF, 0.5°C .. 25°C. It is possible to deactivate the anti-freeze operation setting it to the minimum until the text "OFF" is displayed. The device has factory default value of the Anti-freeze mode set on +6°C.
WARNING
The mode is active only when the device has been set on heating mode.

"Entc PAr 3.0" EXTERNAL NTC SENSOR SETTING
The programmable thermostat features an input for an optional external NTC sensor as well as an internal sensor.
The sensor can be used to read the room temperature in case the programmable thermostat must be installed in an unsuitable position for room temperature measure. Alternatively the external sensor can be configured for floor temperature reading, which can be useful in an underfloor heating/cooling system.The parameter can be set with the following values:

' **no** ': No remote sensor connected.
' **rooM** ': Remote sensor connected to detect room temperature.
' **FLOH** ': Remote sensor connected to detect floor temperature, but it is not shown on the display.
' **FLOS** ': Remote sensor connected to detect floor temperature, which can be shown on the display.

"LinF PAr 3.1": FLOOR TEMPERATURE LOWER LIMIT (this parameter is only visible if Entc is set to FLOH or FLOS)
"LSUP PAr 3.2": FLOOR TEMPERATURE UPPER LIMIT (this parameter is only visible if Entc is set to FLOH or FLOS)
With the external floor sensor, the thermostat will be able to take into account a minimum and a maximum floor temperature limit during the room temperature regulation. In these parameters it is possibile to set a minimum or maximum floor temperature limit. In case the external sensor is wired and configured to read the floor temperature, the programmable thermostat will give priority to the limits within the floor temperature must stay when regulating the room temperature. In heating mode it will be possible to set a lower limit under which the floor temperature must not fall in order not to feel a cold floor, while it will be possible to set a upper limit beyond which the floor temperature must not rise in order to guarantee the maximum wellness. The programmable thermostat alerts when it is regulating to maintain the floor temperature within the limits blinking the ' ⬅ ' symbol on the display. The floor temperature lower limit can be set in the 10..30 °C range, while the upper limit can be set in the 20..50 °C range. The limits can be disabled setting them under their minimum value turning the knob counterclockwise until the value 'no' appears.
The device is factory default set with limits disabled.

"OFS1 PAr 4.0" INTERNAL SENSOR OFFSET SETTING
With this parameter it is possible to correct the room temperature reading by ±10.0 °C in order to correct any systematic reading error due to the placement of the thermostat in areas unsuitable for room temperature measure. The device is default factory set with the Offset to 0.0°C.

"OFS2 PAr 5.0" REMOTE SENSOR OFFSET SETTING
With this parameter it is possible to correct the remote sensor temperature reading by ±10.0 °C in order to correct any systematic reading error due to the placement of the remote sensor in areas unsuitable for room temperature measure. The device is default factory set with the Offset to 0.0°C.

"HYSt PAr 6.0" DIFFERENTIAL SETTING (hysteresis)
Setting this parameter allows you to define the hysteresis, in °C, that is used for room temperature control (ON/OFF).
The parameter can be set in the range 0.0°C ... 5.0°C. The device, by factory default, is set with the differential set to 0.2°C.

WARNING!
Changing this parameter should be done by qualified personnel, as an inappropriate value can cause abnormal operation.

"tPI PAr 7.0" PWM REGULATION ON RECEIVER'S OUTPUT
Allows to choose whether the receiver output must be ON/OFF driven or PWM (Pulse Width Modulation) driven. With ON/OFF regulation (parameter set to 'no') the receiver will ON/OFF regulate the output with customizable hysteresis on parameter 'HYSt', while with PWM regulation (parameter set to 'YES') the receiver will proportionally regulate the output. The proportional regulation can be adapted to the different room with several parameters: proportional band 'bP', integral time 'tInt', PWM cycle time 'PCYC', Minimum time PWM ON 'PMIn'.
The device is default factory set with the parameter to 'no'.

The parameters 7.x will be visible only if the parameter "tPI" is set to "YES".

"bP PAr 7.1"   PWM PROPORTIONAL BAND

This parameter allows to customize the proportional band in the range 1.0°C .. +8.0°C.
The device is default factory set with the parameter to 2°C.

"t Int PAr 7.2" INTEGRATIVE TIME

This parameter allows to customize the integral time of the proportional regulation in the range OFF / 5 .. 180 minutes, by 5 minutes steps.
When set to OFF, no integral action will be done.
The device is default factory set with the parameter to **OFF**.

"PCYC PAr 7.3" PWM CYCLE TIME

This parameter defines the duration of each PWM cycle in minutes, i.e. how often (in minutes) the variable width pulse is repeated.
The parameter can be set in the range 15 .. 60 minutes.
The device is default factory set with the parameter to 30 minutes.

"PMIn PAr 7.4" MINIMUM TIME PWM ON

The parameter defines the minimum width of the PWM pulse, i.e., the minimum turn-on time of the output. When an electro-thermal actuator is wired to the output, this parameter must be set with the actuator's travel time, otherwise 'on' pulses shorter than the travel time would not generate appreciable output actions. The parameter can be set in the range 0 ... 15 minutes.
The device is default factory set with the parameter to 0 minutes.

"tMIn PAr 8.0" OUTPUT MINIMUM ACTIVATION TIME (relay)

The following parameter will only be visible if the parameter "tPI" has been set to "no".
This parameter allows to reduce the number of ON/OFF cycles of the output. This function is useful in case the programmable thermostat drives a pellet stove which cannot be switched On and Off for a short period of time. Once the receiver's relay is switched On according to a heating (or cooling) need of the room, it will not be switched Off until the 'minimum On time' is expired.
This parameter can be set in the range no/5 .. 90 minutes, with 5 minutes steps.
The device is factory set with the parameter to 0, i.e. function disabled.

"EOrM PAr 9.0" EXTENDS OUTPUT DRIVING MODE TO THE OTHER CHANNELS OF THE RECEIVER

This parameter has a meaning only if the programmable thermostat is coupled to a multi-channel receiver (DRRO2M / DLP ---). If this parameter is set to 'YES', all the receiver's channels will be configured with ON/OFF or PWM driving mode chosen in the parameter 'OPWM' and relative parameters, hysteresis 'HYSt', proportional band 'bP', integral time't int', PWM cycle time 'PCYC', Minimum time PWM ON 'PMIn'. So, the programmable thermostat can be used to configure the output driving mode not only of the learned channel but also all the other channels on the receiver. In this way the receiver hysteresis can be customized or an output can become PWM, even if the channel will later be coupled to a plain non configurable thermostat.

"dFLt PAr 10.0" SET DEFAULT DATA

With this parameter it is possible to reset user parameters in order to bring back all the parameters to the factory default.
Proceed as follows:
1. Select the parameter "**dFLt**" and push the knob or the button " OK "; the display shows the blinking writing "**-dF-**", indicating that the operation must be confirmed.
2. Push again the knob or the button " OK "; the device sets the default data.
    If no button is pushed for 10 seconds or ' ⏻ ' button is pushed, the operation is cancelled.
3. The display return to normal operation, and 'Test' mode is automatically activated to configure the receiver's output with default settings.
4. Wait 10 seconds and press " ⏻ " button to end the 'Test' mode.

WARNING!
By resetting the default data, the user parameters and the time schedule of freetime evo will be restored to factory values.

TROUBLESHOOTING

PROBLEM	LIKELY CAUSES AND REMEDIES
The display shows the icon "🔧" and the following writings: **SnIn** alternated to **Shrt** or **Open**	The regulation of the room temperature is performed through the internal sensor (user parameter "Entc PAr 3.0" is set to "no") and the internal sensor is faulty. It is necessary to send the device to service center.
The display shows the icon "🔧" and the following writings: **SnEh** alternated to **Shrt** or **Open**	The regulation of the room temperature is done using the remote sensor reading (user parameter "Entc PAr 3.0" is set to "rooM"), but the remote sensor is not connected or is faulty. The freetime evo radio does not regulate the room temperature and the output remains off. Check the connections of the remote sensor or replace it with a new one
The remote sensor temperature is not shown on the display.	The regulation of the room temperature is done using the internal sensor reading (the user parameter "Entc PAr 3.0" is set to "no") but you want to display the floor temperature, set "Entc PAr 3.0" to the value "FLOS".
The display shows "Err".	The remote sensor is used as a floor sensor, the user parameter "Entc PAr 3.0" is set to "FLOS", but the remote sensor is not connected or is faulty. Check the connections of the remote sensor or replace it with a new one
The display shows the blinking writing "bAtt" and the symbol " ▭ ".	The batteries are too low to allow freetime evo to operate. Replace the batteries.
The display shows the symbol " ❄ ".	Freetime evo is operating in Cooling mode. In order to resume the Heating mode, set the user parameter "H_C" to HEAt (see chapter "USER PARAMETERS SETTINGS").

WARNING
In case of faulty condition of the roon temperature sensor, the only permissible action is to enter user parameter menu.