



# Installation and user manual



Heating and  
Cooling



Night set  
back mode

**Unisenza** - Digital Thermostat

EN





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## 1 SAFETY WARNING

During installation and operation of the device, it is necessary to comply with the following instructions:

- 1) The device must be installed by a skilled person, in strict compliance with the connection diagrams.
- 2) Do not power on or connect the device if any part of it is damaged.
- 3) After installation, inaccessibility to the connection terminals without appropriate tools must be granted.
- 4) The device must be installed and activated in compliance with current electric systems standards.
- 5) Before accessing the connection terminals, verify that the leads are not live.

## 2 TECHNICAL SPECIFICATIONS

- Purpose of control: electronic thermostat;
- Construction of control and whether the control is electronic (see above example);
- Setting range: +5/+35 °C;
- Supply voltage: 230 V~ ±10 % - 50/60 Hz;
- Power consumption: 3 W;
- Capacity of the contacts: 2 (1) A 230 V~ (not voltage free);
- Type of automatic action: 1;
- Construction: Class II;
- Ingress protection: IP 30;
- Operating temperature: 0 °C...40 °C;
- Operating humidity: 20 %...90 % rH non condensing;
- Storage temperature: -20 °C...60 °C;
- Shock load voltage: 2,5 kV;
- Temperature for Ball Pressure Test: 90° C;
- Pollution degree: 2 (normal).

## 3 REFERENCE STANDARDS

Conformity with EU directives:

2014/35/EU (LVD)

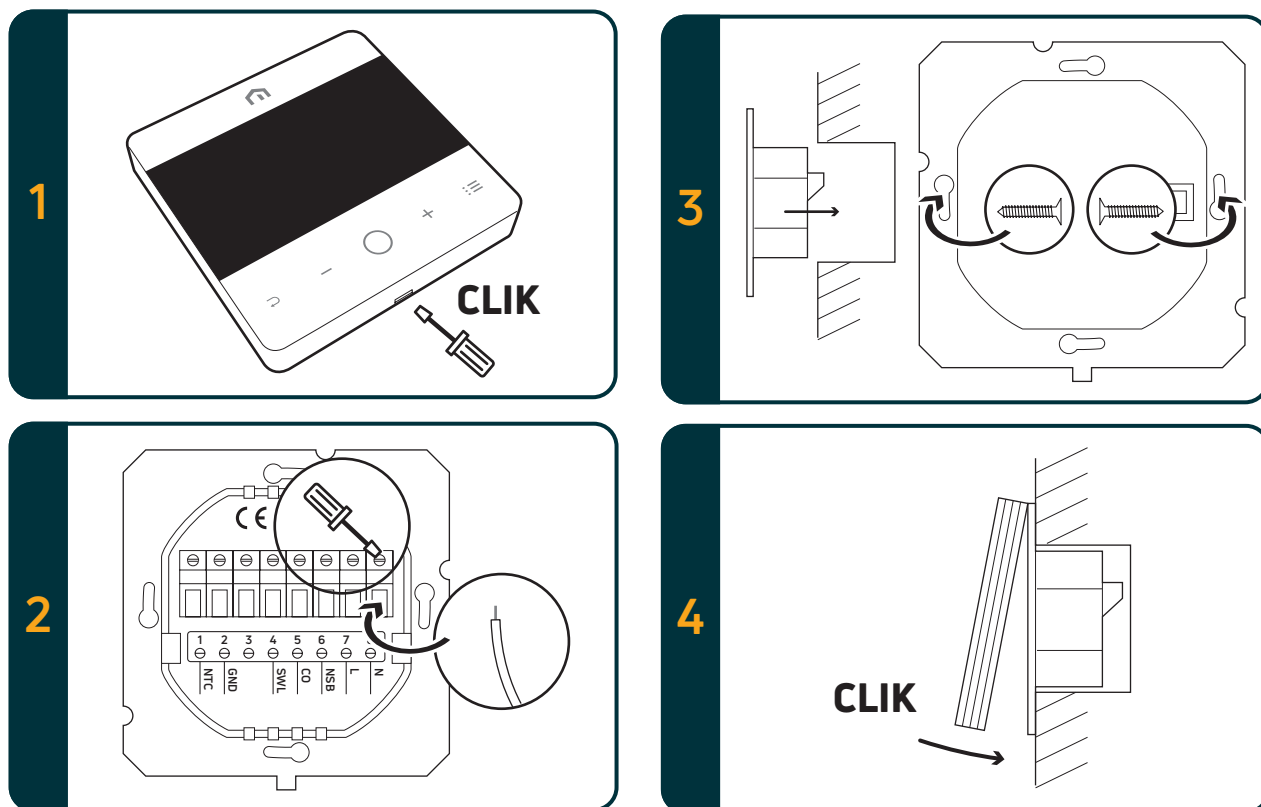
2014/30/EU (EMCD)

is declared with reference to the following standard:

- EN 60730-2-9: Automatic electric command devices for household and similar use.  
Part 2: particular provisions for thermosensitive command devices.

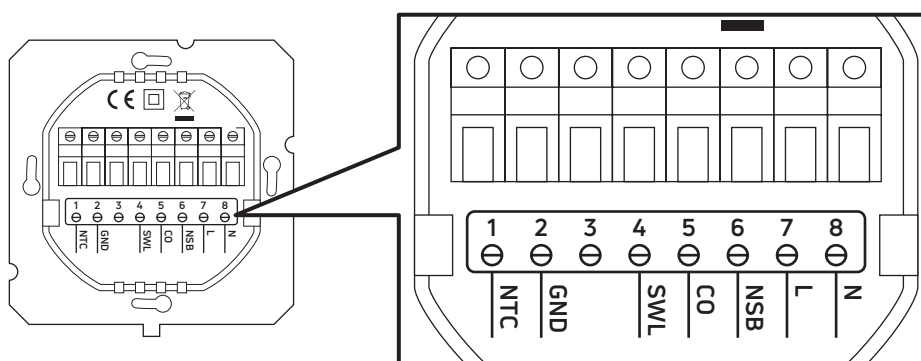
## 4 INSTALLATION AND ELECTRICAL CONNECTION

### 4.1 Wall fixing



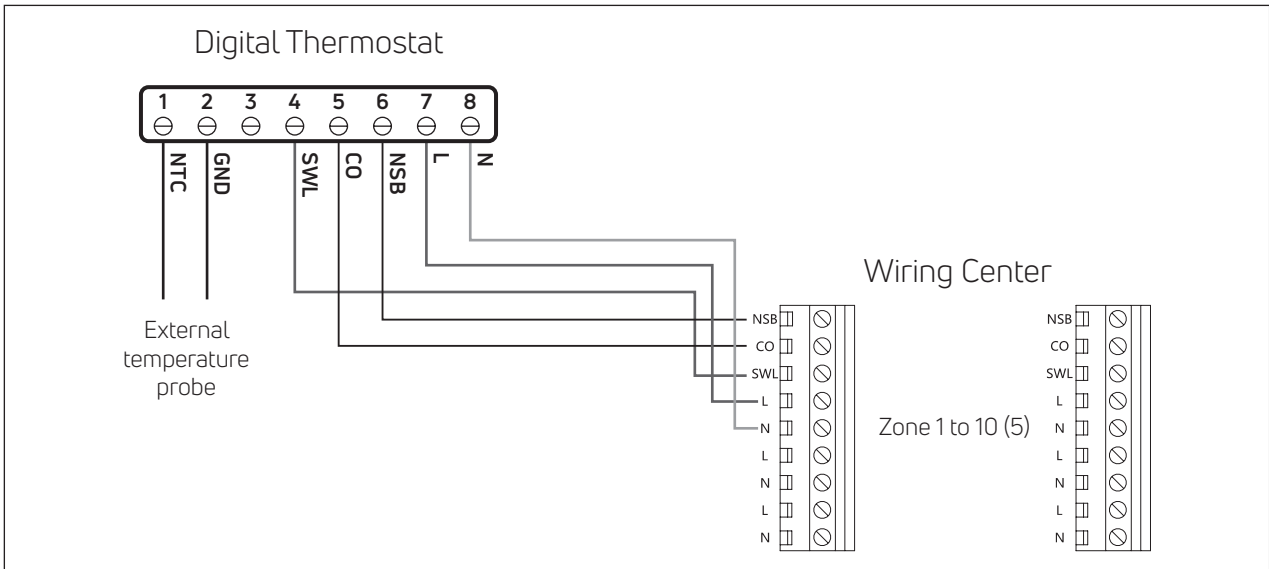
### 4.2 Wiring diagram

#### 4.2.1 Thermostat terminals description



Terminals	230 Vac version	24 Vac version
1. NTC	External sensor (NTC 10 KOhm)	
2. GND	Wire ground terminal (NTC 10 KOhm)	
3.		
4. SWL	Switch output (Live 230 Vac during request)	Switch output (Live 24 Vac during request)
5. CO	Heating and Cooling terminal (Live 230 Vac: cooling)	Heating and Cooling terminal (Live 24 Vac: cooling)
6. NSB	Night set back input (Live 230 Vac: reduced mode)	Night set back input (Live 24 Vac: reduced mode)
7. L	Live input 230 Vac	Live input 24 Vac
8. N	Neutral input 230 Vac	Neutral input 24 Vac

#### 4.2.2 Connection to the Wiring Centre

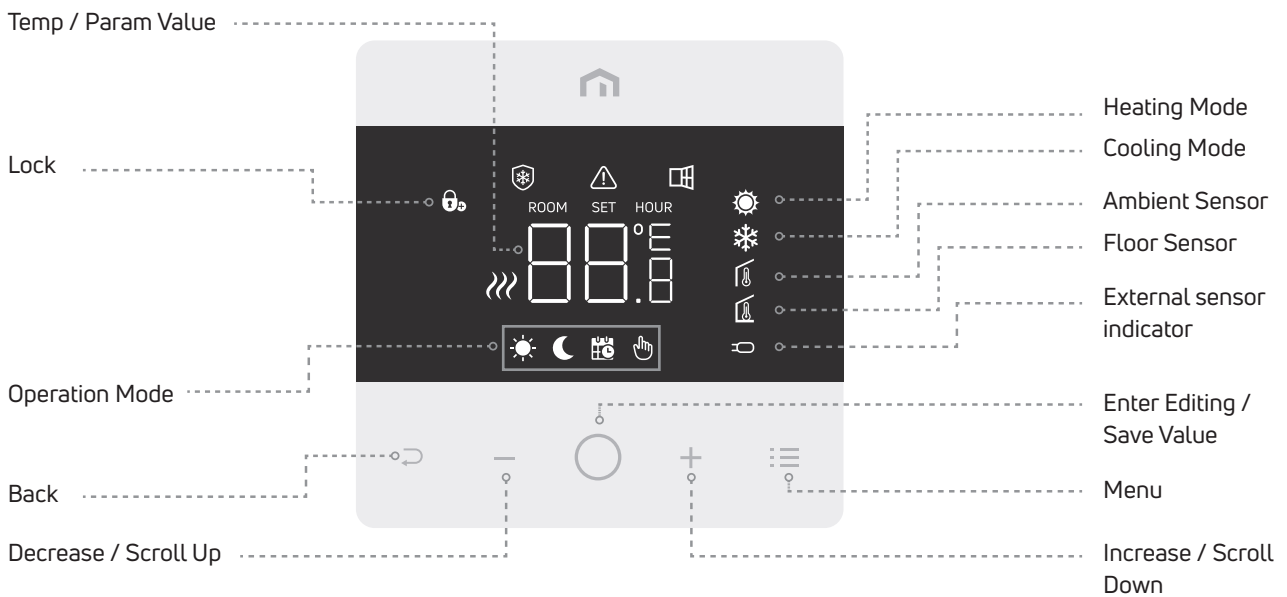


**Note:**

- CO connection is optional. It's needed to use change over function. (Further explanation in Wiring center manual).
- NSB connection is optional. It's needed to use night setback function. (Further explanation in Wiring center manual).
- External temperature probe is optional.

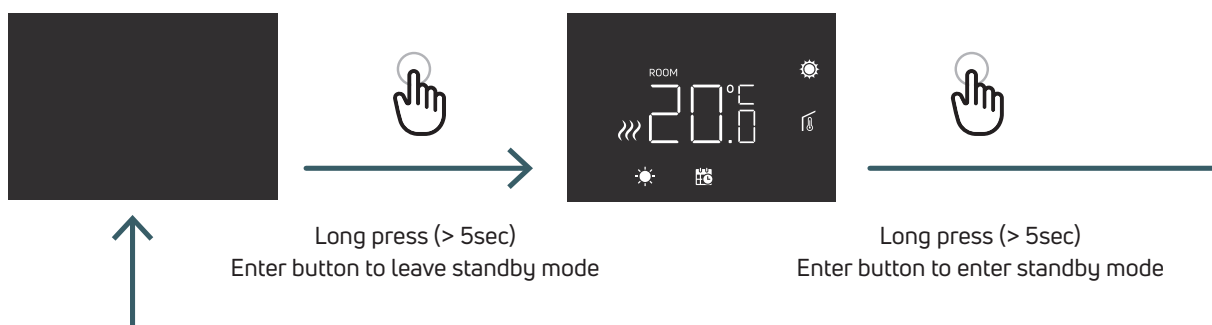
### 5 USER GUIDE

#### 5.1 Home Screen



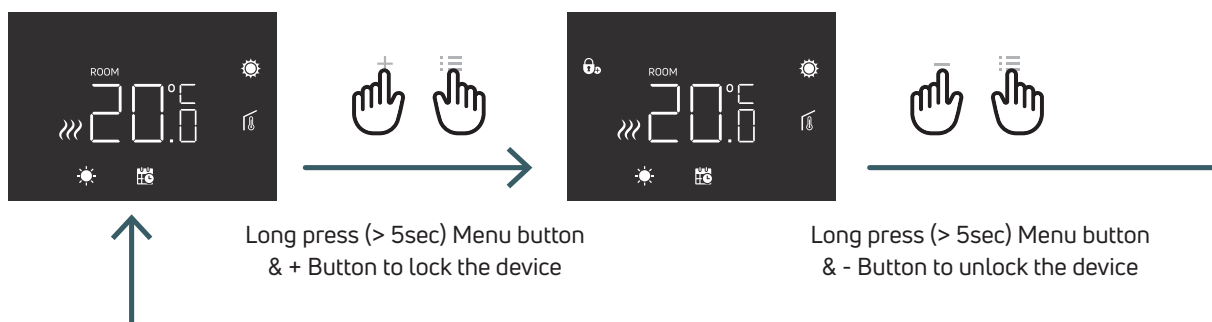
Note: After 20 seconds from the last button pressed, the display and buttons go in sleep mode. Short press on any button to wake up the display and buttons before select any function.

### 5.1.1 Standby

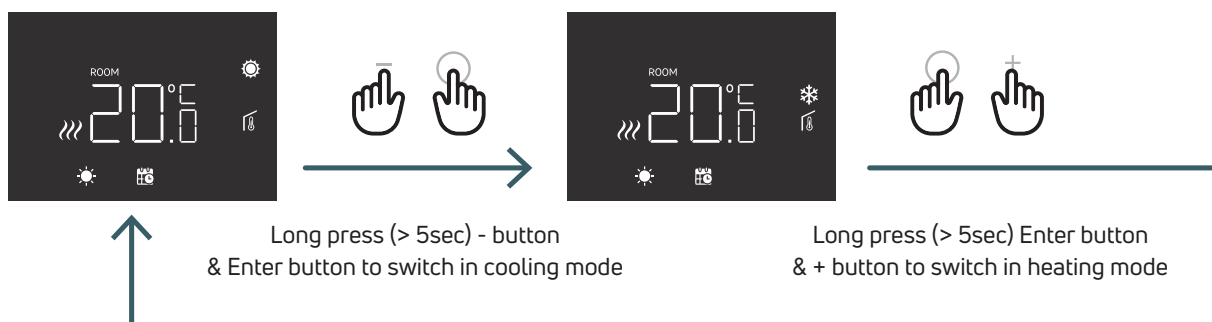


Attention: Note in standby only the antifreeze function is alive.

### 5.1.2 Lock – Unlock



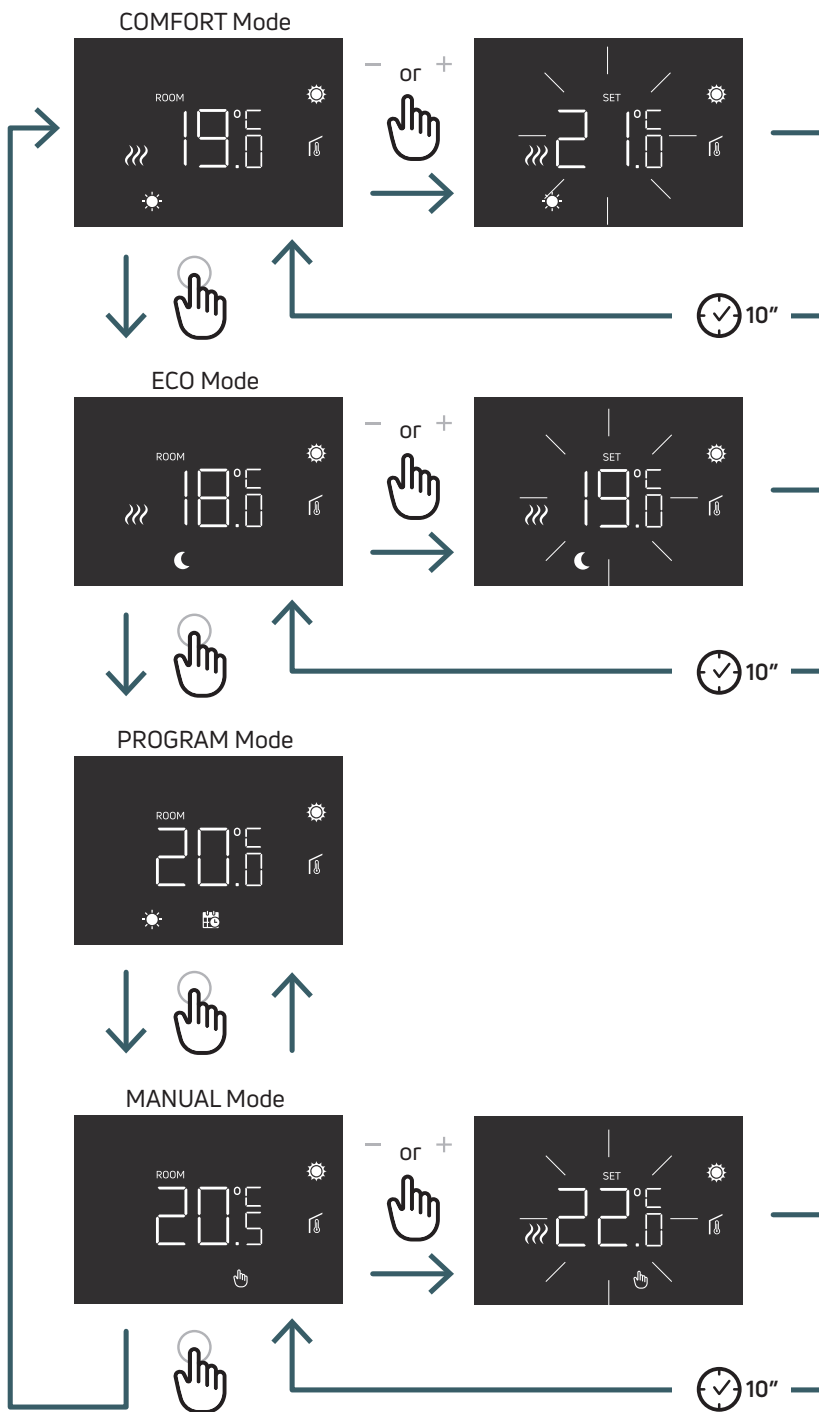
### 5.1.3 Heating – Cooling



When the thermostat is connected to a wiring centre, only one device (thermostat or wiring centre) can switch the system from heating to cooling and then from cooling to heating. If you try from a thermostat to switch from cooling to heating mode and the thermostat displays NO, it means that it is possible to switch in cooling mode only from the device (thermostat or wiring centre) that switched the system from heating to cooling.

Note: If in the thermostat the Cooling function (User menu 03 COL) is disabled, it is not possible to switch in cooling mode, if you try the heating icon blinks.

### 5.1.4 Working modes selection





#### 5.1.4.1 COMFORT Mode

In this mode the device will work with fixed temperature (Comfort temperature).

Using plus or minus button it's possible modify the Comfort temperature value.

#### 5.1.4.2 ECO Mode

In this mode the device will work with fixed temperature (Eco temperature).

Using plus or minus button it's possible modify the eco temperature value.

#### 5.1.4.3 PROGRAM Mode

In this mode the device changing between comfort and eco is based on NSB terminal input when the digital thermostat is connected to the wiring centre.

#### 5.1.4.4 MANUAL Mode

In this mode the device will work with fixed temperature.

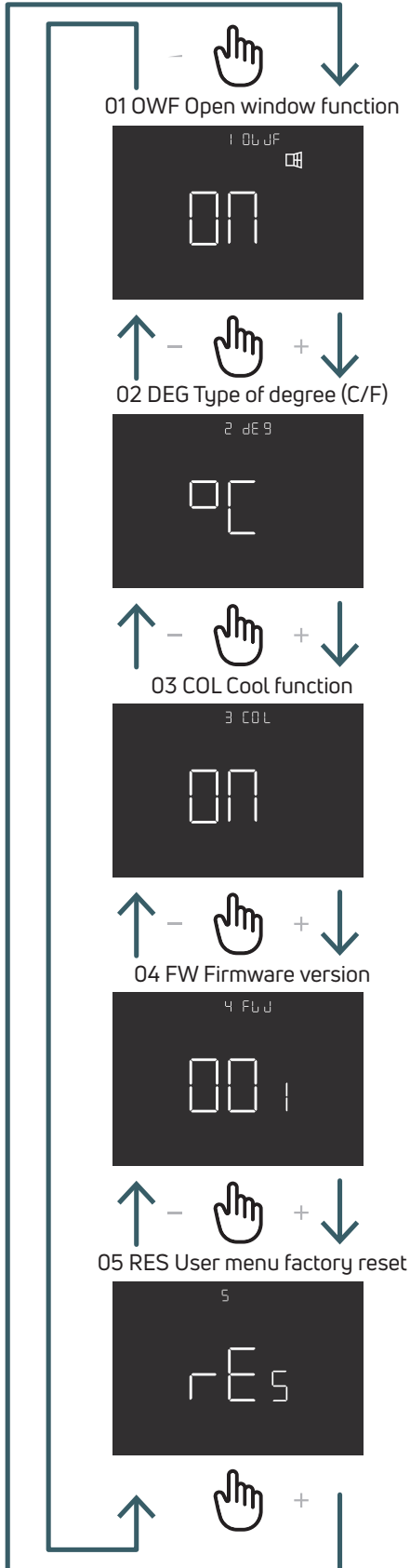
Using plus and minus button it's possible modify the temperature.

## 5.2 User Menu

Short press Menu button to wake up the display, then long press (>5sec) menu button to enter in the User menu.

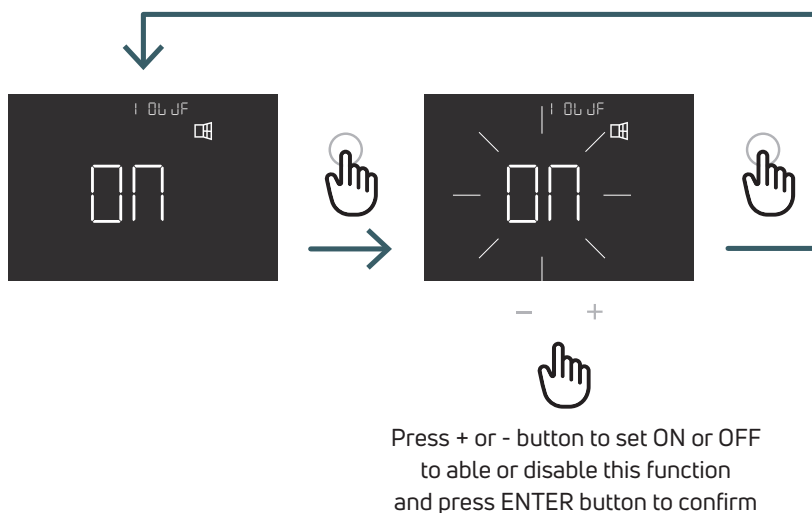
### 5.2.1 User Menu Map

To scroll in the user menus press + or - buttons.



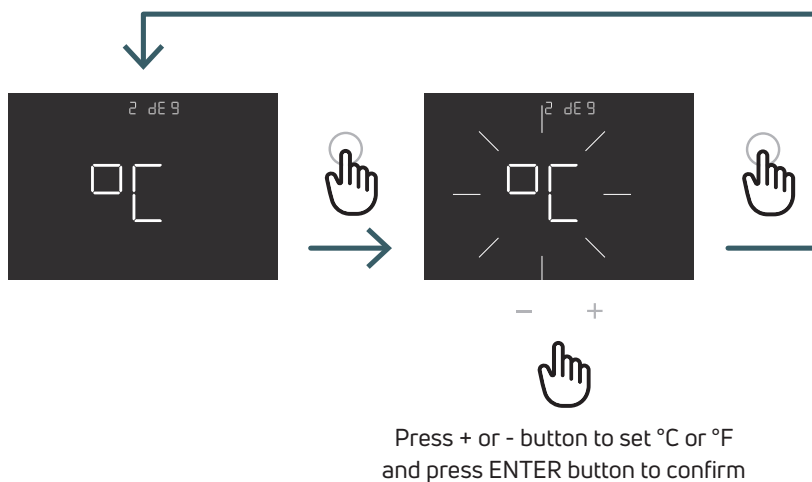
### 5.2.1.1 01 OWF Open window function

If the open window function is enabled (ON), in case of temperature drop during heating the device turns off the heater for 1 hour.



### 5.2.1.2 02 DEG Type of degree (C/F)

Change temperature visualization unit (Centigrade/ Fahrenheit)

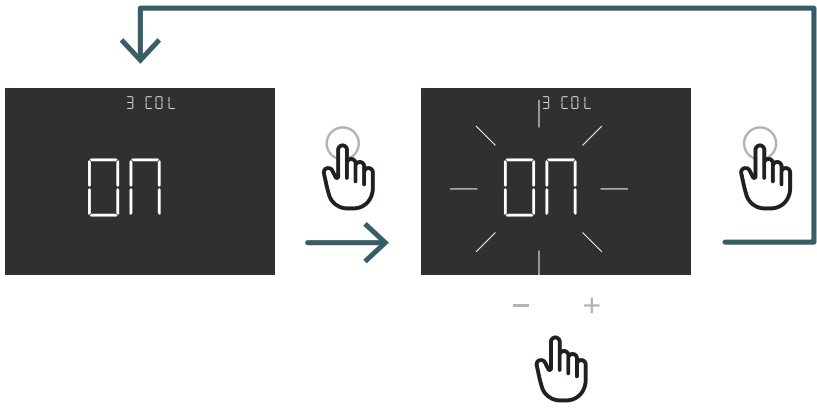


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### 5.2.1.3 03 COL Cool function

If this function is enabled (ON), the thermostat works in both heating and cooling and it is possible to change the operating mode both from the keyboard and from the CO terminal.

If this function is not enabled (OFF), the thermostat only works in heating mode and it is not possible to change the operating mode either from the keyboard or from the CO terminal. If you try to change the mode, the heating icon flashes.



Press + or - button to set ON or OFF  
to able or disable this function  
and press ENTER button to confirm

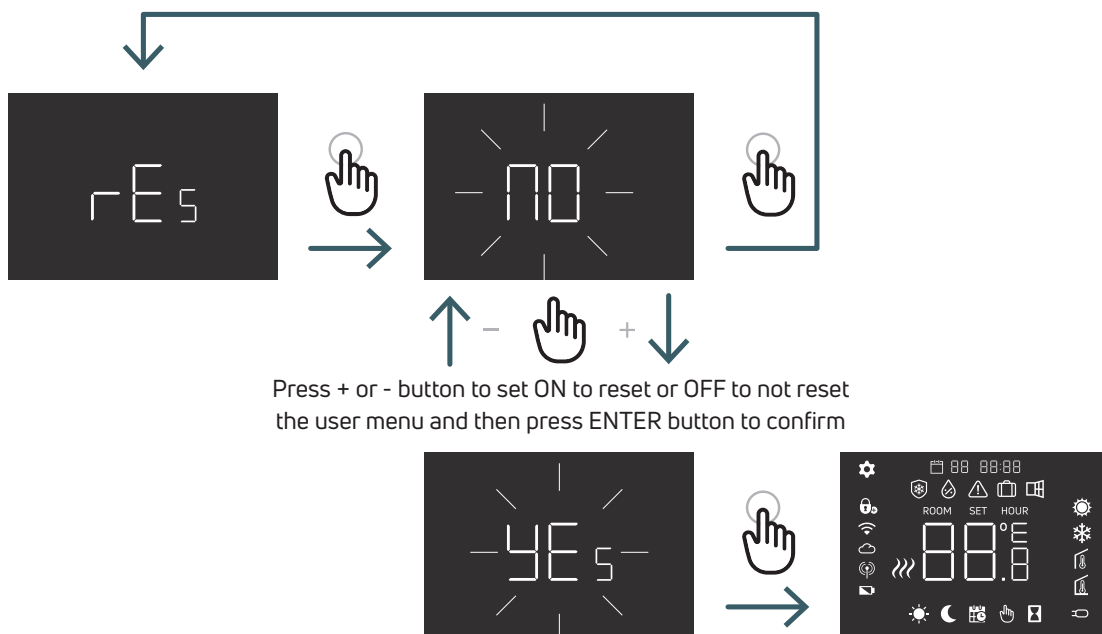
### 5.2.1.4 04 FW Firmware version

In this menu the thermostat displays the current firmware version.



### 5.2.1.5 RES User menu factory reset

In this menu it is possible reset all menus in the user menu to default values.  
See the table below for the user menu default values.



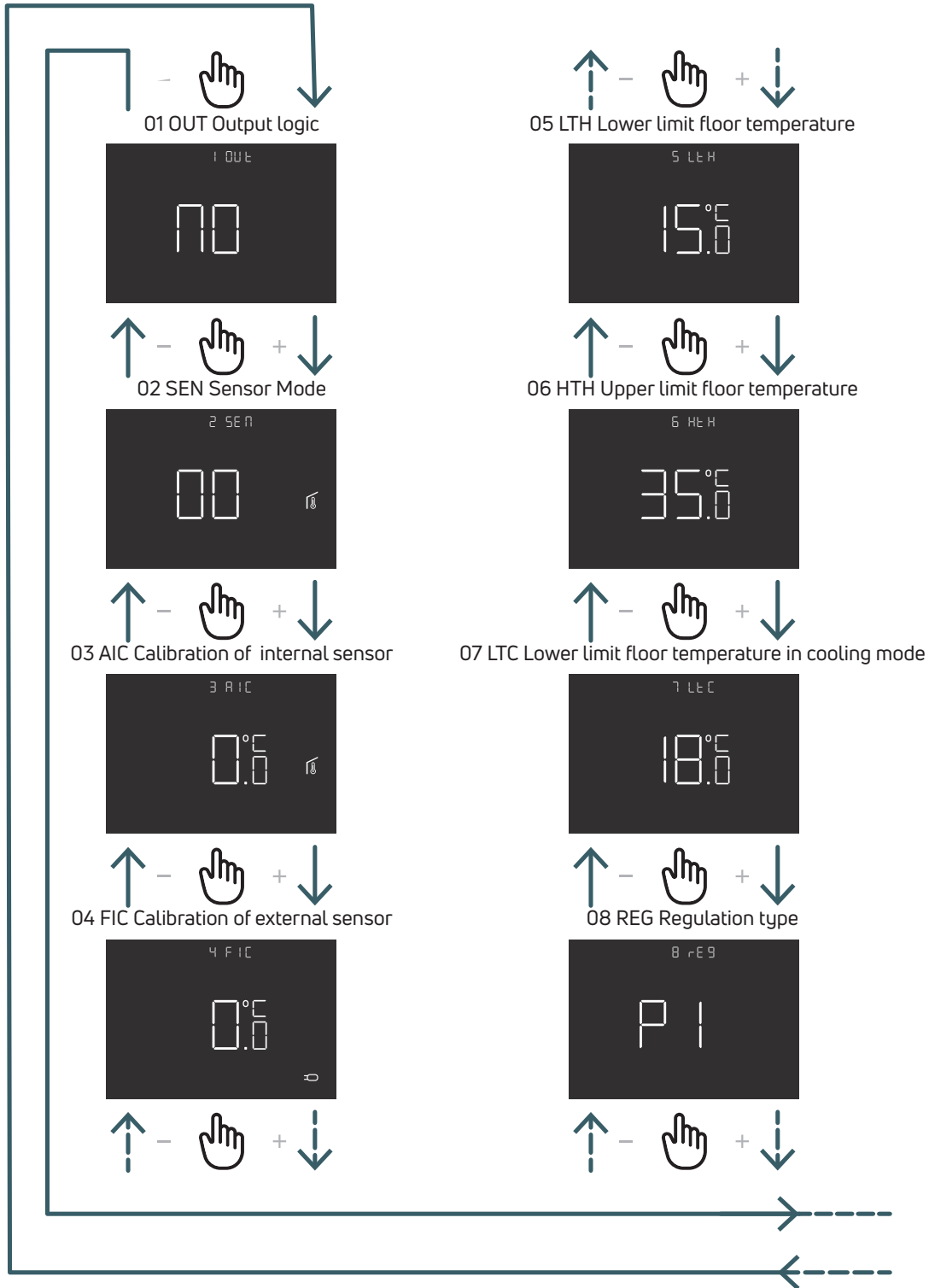
N°	Menu	Description menu	Default Value	Range
1	OWF	Open window function	On	On/Off
2	DEG	Type of degrees	°C	°C/F
3	COL	Cool function	On	On/Off
4	FW	Firmware version	FW version	
5	RES	Factory reset User menu	No	Yes/No

### 5.3 Advanced Menu

Short press Menu button to wake up the display, then long press (>5sec) Menu button and Enter button to enter in the Advanced menu.

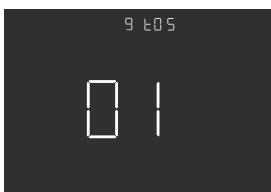
#### 5.3.1 Advanced Menu Map

To scroll in the user menus press + or - buttons.

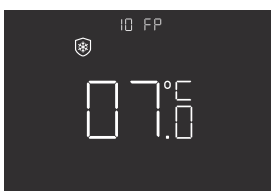




09 TOS Type of system



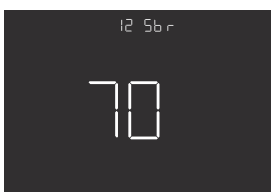
10 FP frost protection temperature



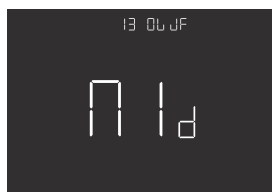
11 LOT Lock Type



12 SBR Screen Brightness



13 OWF Open window function type



14 RES Advanced Menu factory reset



### 5.3.2 Advanced Menu Item explanations

To enter in a menu press the ENTER button.

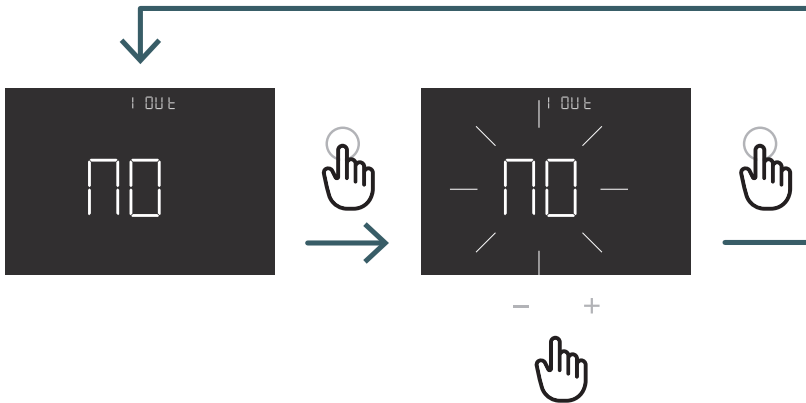
In each menu press the ENTER button to confirm and save the selected option or BACK button to come back without save.

#### 5.3.2.1 01 OUT Output logic

In this menu is possible Change output logic between

NO - normally open: live on SWL terminal when there is heating or cooling request

NC - normally closed: no live on SWL terminal when there is heating or cooling request

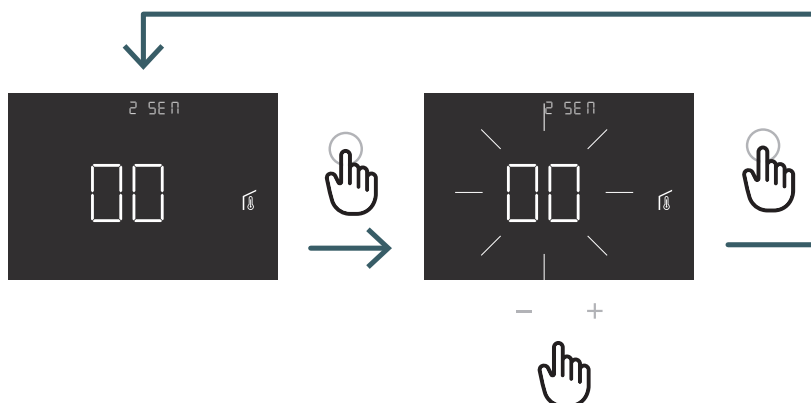


Press + or - button to select NO or NC output logic and press ENTER button to confirm







### 5.3.2.2 02 SEN Sensor Mode

Define the configuration of temperature sensor:



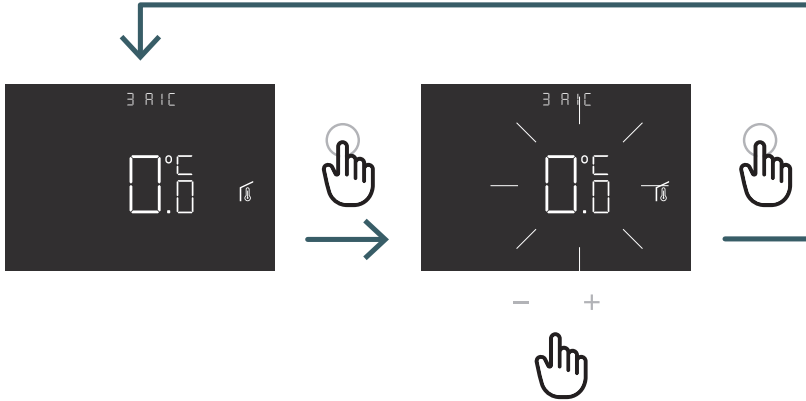
Press + or - button to select 00, 01, 02 or 03 sensor mode and then press ENTER button to confirm

Configuration sensor	Description	Internal sensor	External sensor	Icon
00	Ambient temperature with internal temperature sensor	Ambient temperature	Not present	 Ambient sensor icon
01	Floor temperature with external temperature sensor	Not used	Floor temperature	 Floor sensor icon
02	Ambient temperature with external temperature sensor	Not used	Ambient temperature	 External sensor icon
03	Ambient temperature with internal temperature sensor and floor temperature with external temperature sensor	Ambient temperature (main sensor)	Floor temperature (check temperature, not regulation)	 On the display is displayed the room temperature with ambient sensor icon. If you press for 5 sec. the Return button the floor temperature with floor sensor icon is displayed for 10 sec.

### 5.3.2.3 03 AIC Calibration of internal sensor

In particular installation conditions, it can happen that the temperature measured by the device deviates from the average temperature present in the room. In this case, introduce an adjustment temperature in this menu for the internal sensor when the sensor mode is 00 or 03.

Note: the temperature value shown on the display during normal operation is inclusive of any adjustment introduced.

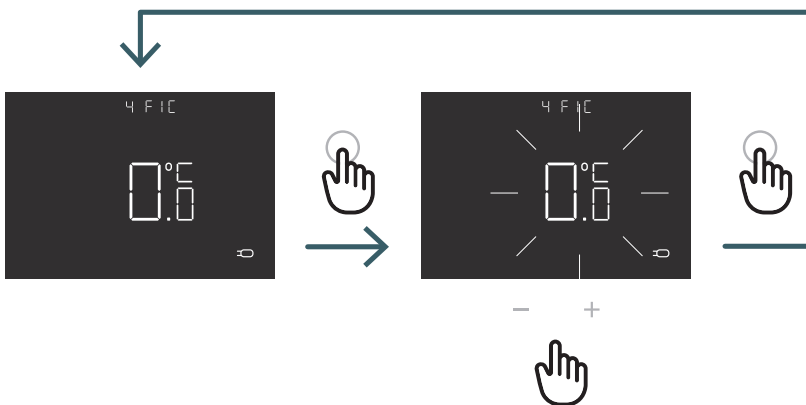


Press + or - button to increase or decrease the adjustment value and then press ENTER button to confirm

### 5.3.2.4 04 FIC Calibration of external sensor

In particular installation conditions, it can happen that the temperature measured by the device deviates from the average temperature present in the room. In this case, introduce an adjustment temperature in this menu for the external sensor when the sensor mode is 01, 02 or 03.

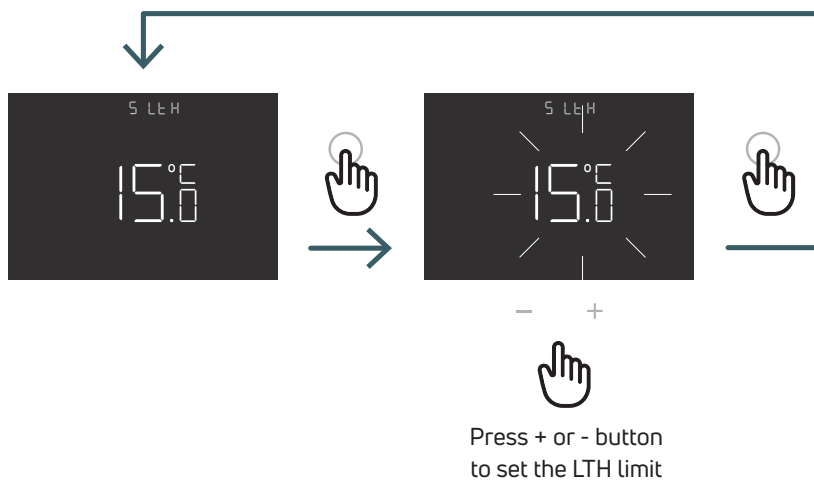
Note: the temperature value shown on the display during normal operation is inclusive of any adjustment introduced.





Press + or - button to increase or decrease the adjustment value and then press ENTER button to confirm

### 5.3.2.5 05 LTH Lower limit floor temperature

Lower limit value for external sensor used like floor sensor in heating mode.  
If the floor temperature is lower than the LTH limit the floor sensor icon blinks.  
This menu is showed only in mode sensor 01 or 03



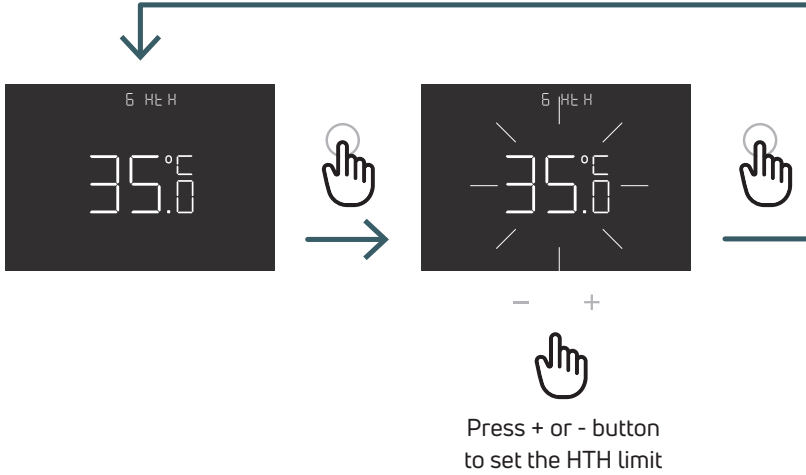
		Low temperature in Heating	
Configuration sensor	Description	LTH	Effect
00	Ambient temperature with internal temperature sensor	-	
01	Floor temperature with external temperature sensor	Yes	If the floor temperature is lower than the LTH limit the floor sensor icon blink 
02	Ambient temperature with external temperature sensor	-	-
03	Ambient temperature with internal temperature sensor and floor temperature with external temperature sensor	Yes	If the floor temperature is lower than the LTH limit the floor sensor icon blink 





### 5.3.2.6 06 HTH Upper limit floor temperature

Higher limit value for external sensor used like floor sensor in heating mode.

If the floor temperature is higher than the HTH limit the floor sensor icon and alarm icon blink and heating request is blocked.

This menu is showed only in mode sensor 01 or 03.



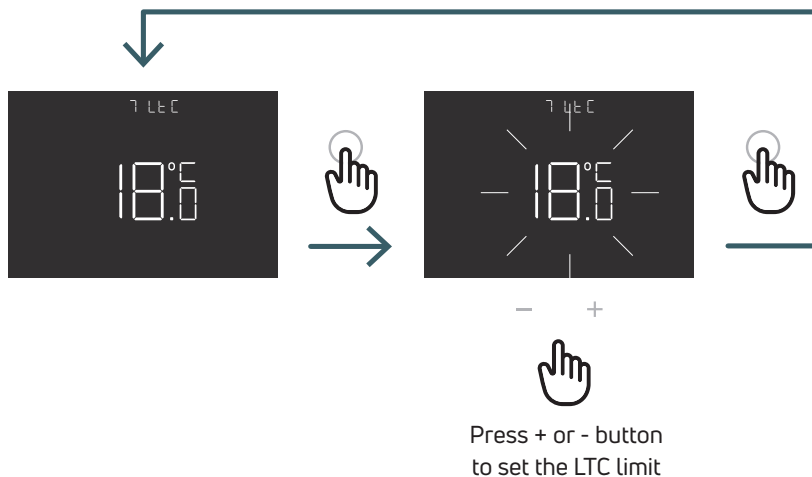
		High temperature in Heating	
Configuration sensor	Description	HTH	Effect
00	Ambient temperature with internal temperature sensor	-	
01	Floor temperature with external temperature sensor	Yes	If the floor temperature is higher than the HTH limit the floor sensor and heating request is blocked  
02	Ambient temperature with external temperature sensor	-	-
03	Ambient temperature with internal temperature sensor and floor temperature with external temperature sensor	Yes	If the floor temperature is higher than the HTH limit the floor sensor and alarm icons blink and heating request is blocked  





### 5.3.2.7 07 LTC Lower limit floor temperature in cooling mode

Lower limit value for external sensor used like floor sensor in cooling mode.

If the floor temperature is lower than the LTH limit the floor sensor icon and alarm icon blink and the cooling request is blocked.

This menu is showed only in mode sensor 01 or 03



		Low temperature in Cooling	
Configuration sensor	Description	LTC	Effect
00	Ambient temperature with internal temperature sensor	-	-
01	Floor temperature with external temperature sensor	Yes	If the floor temperature is lower than the LTC limit the floor sensor and alarm icons blink and cooling request is blocked  
02	Ambient temperature with external temperature sensor	-	-
03	Ambient temperature with internal temperature sensor and floor temperature with external temperature sensor	Yes	If the floor temperature is lower than the LTC limit the floor sensor and alarm icons blink and cooling request is blocked  

### 5.3.2.8 08 REG Regulation type

#### P regulation

With P regulation, the device activates the heating (cooling) until the measured temperature is lower (higher) than the set one.

In order to avoid the oscillation straddling the set temperature which would cause the system to switch on and off continuously, a differential (or hysteresis) is introduced.

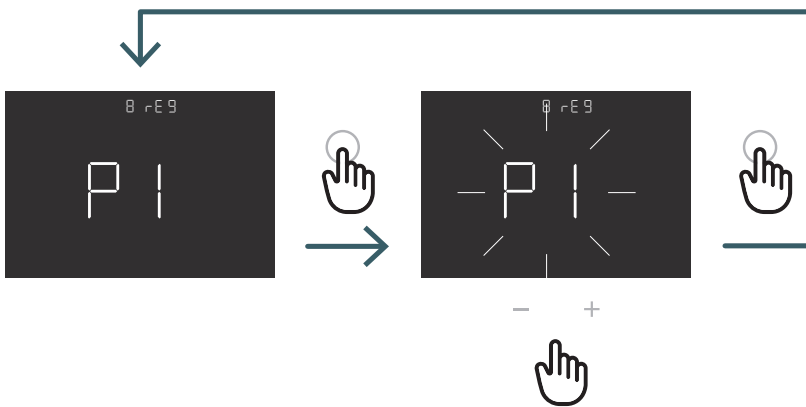
In this way the system is switched on:

- in heating, when the ambient temperature drops below the value "set temperature-differential" and remains on until the "set temperature+ differential" is reached.
- in conditioning, when the ambient temperature exceeds the value "set temperature+ differential" and remains on until the "set temperature-differential" is reached.

#### PI regulation

The PI regulation allows to keep the ambient temperature more constant and is based on the concept of band and period. The regulation band is the temperature range (centered on the setpoint) in which the proportional regulation is implemented. The adjustment period is the duration of the adjustment cycle (switch on and switch off time).

The band and the period depend from the type of system choosed (see the next menu)

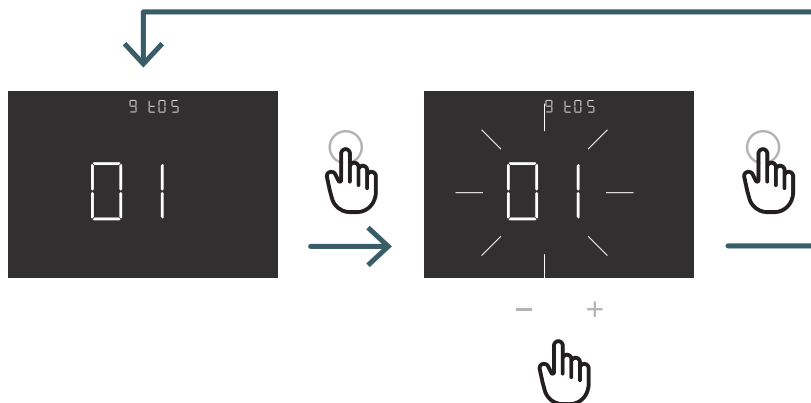


Press + or - button to select P or PI regulation type and press ENTER button to confirm

### 5.3.2.9 09 TOS Type of system

For the correct parameters of the PI control select the right system where the thermostat is installed:

- 01: Low thermal inertia heater (fancoil)
- 02: Medium thermal inertia heater (radiators)
- 03: High thermal inertia heater (radiant system)

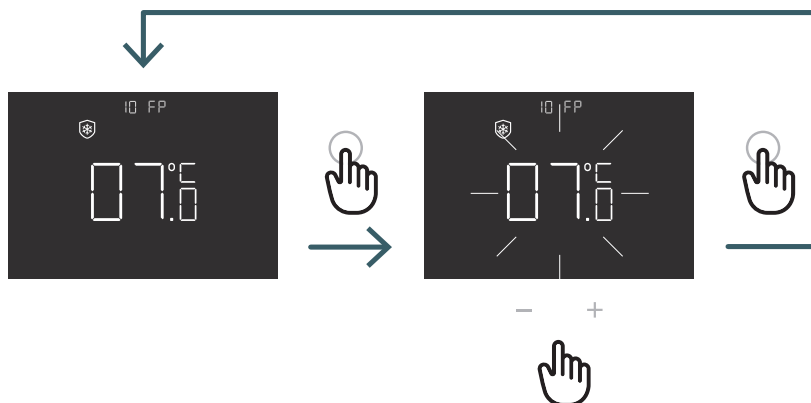


Press + or - button to select the type of system and press ENTER button to confirm

### 5.3.2.10 10 FP frost protection temperature

The frost protection temperature avoids the risk of freezing of the system when the thermostat is in standby mode.

So, in this situation, the thermostat displays the frost protection icon and guarantes the minimum temperature setted in this menu.



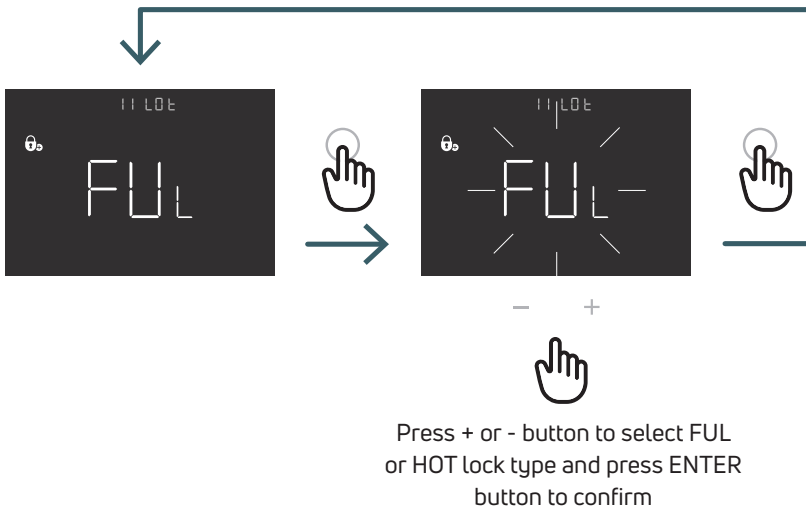
Press + or - button to set the frost protection temperature and press ENTER button to confirm

### 5.3.2.11 11 LOT Lock Type

There are two different lock for the thermostat, so in this menu is possible set:

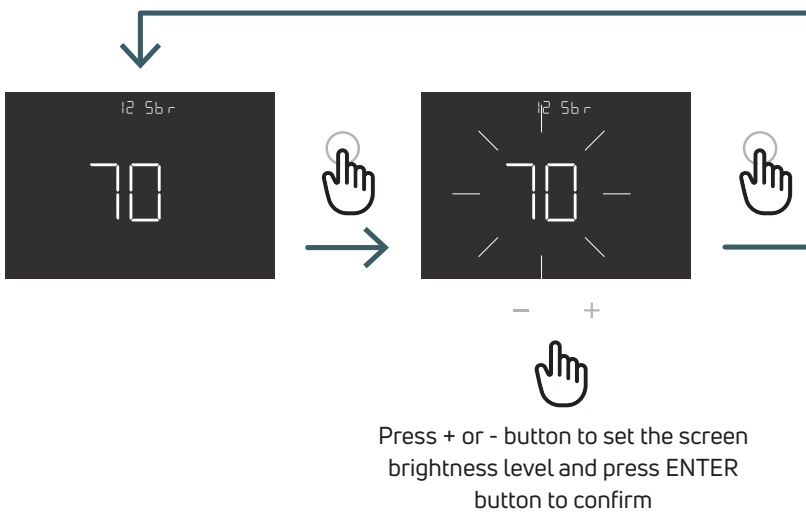
FUL (full): Block all changes after lock mode activation

HOT (hotel): After lock mode activation it is possible use only + and - buttons



### 5.3.2.12 12 SBR Screen brightness

Brightness level of the screen and the buttons in the low power mode (after 15 seconds from the last button press)





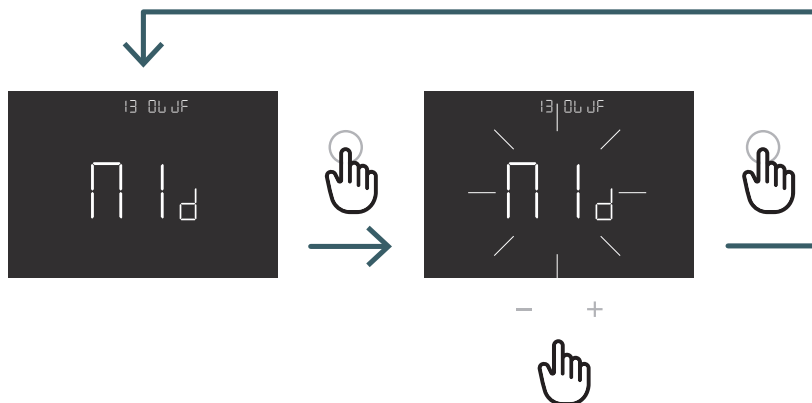
### 5.3.2.13 13 OWF Open window function type

There are three different type for the open window function, so in this menu is possible set:

FAS (fast): Activate function when temperature drop 5 degree in 5 minutes, during heating.

MID (medium): Activate function when temperature drop 3 degree in 5 minute, during heating..temperature.

SLO (slow): Activate function when temperature drop 2 degree in 5 minutes, during heating.

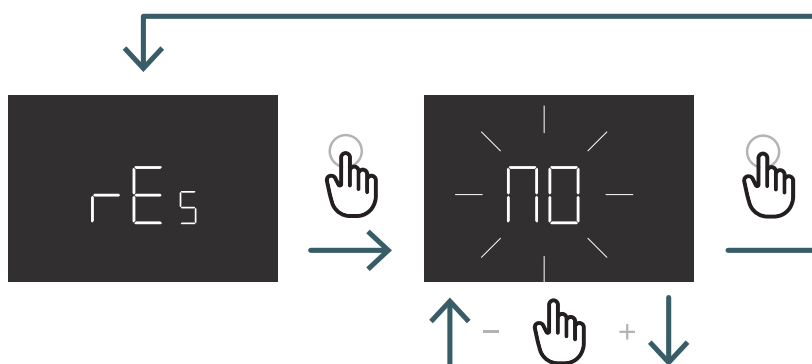


Press + or - button to select the open window function type and press ENTER button to confirm

### 5.3.2.14 14 RES Advanced Menu factory reset

In this menu it is possible reset all menus in the advanced menu to default values.

See the table X2 for the advanced menu default values.








Press + or - button to set ON to reset or OFF to not reset the advanced menu and then press ENTER button to confirm



N°	Menu	Description menu	Default Value	Range
1	OUT	Output Logic	NO	NO/NC
2	SEN	Sensor mode	0	00,01,02,03
3	AIC	Calibration of internal sensor	0	-5:+5
4	FIC	Calibration of external sensor (Visible if there is external sensor connected)	0	-5:+5
5	LTH	Lower limit floor temp	15	+5:+20
6	HTH	Upper limit floor temp	35	+22:+45
7	LTC	Lower limit floor temperature (Cooling mode)	18	+12:+20
8	REG	Regulation type	PI	PI (Proportional) / P (OnOff)
9	TOS	Type of System	3	1 to 3 see cell note
10	FP	Frost protection temp	7	+5:+10
11	LOT	Lock type	FULL	FULL/HOT See cell note
12	SBR	Screen Brightness	70	0 - 99
13	OWF	Open window function type	Middle	Fast,Middle;Slow See cell note
14	RES	Factory reset Advanced menu	No	Yes/No

### 5.4 Alarms and Warnings

If there are some alarms or warning, they are displayed by icons.

Icons	A/W	Description	Cause	Effect
 fixed icon	A	Temperature sensor broken or disconnected	Internal sensor broken (sensor mode 00 or 03) / external sensor broken or disconnected (sensor mode 01, 02 or 03)	The thermostat is blocked. In the event of internal sensor alarm, the thermostat must be replaced. In the event of external sensor alarm, check the external sensor first, otherwise replace the external sensor.
 Blinking icon	W	Low temperature in Heating	The external floor sensor (sensor mode 01 or 03) detects a temperature lower than the LTH limit (see the advanced menu 5)	It is only a warning, check if the system works correctly (e.g. check if the boiler is working during heating request)
 Blinking icons	A	High temperature in Heating	The external floor sensor (sensor mode 01 or 03) detects a temperature higher than the HTH limit (see the advanced menu 6)	It is an alarm, the thermostat is blocked until the floor temperature returns to being lower than the HTH limit.
 Blinking icons	A	Low temperature in Cooling	The external floor sensor (sensor mode 01 or 03) detects a temperature lower than the LTC limit (see the advanced menu 7)	It is an alarm, the thermostat is blocked until the floor temperature returns to being higher than the LTC limit.
 Blinking icon	W	Changing in cooling mode a thermostat that works only in heating	If the cooling function is disabled (User Menu 3: COL - OFF) and the thermostat works only in heating	If you try to change in cooling mode from the thermostat (long press of ENTER and - buttons) the heating icon blinks for some seconds. If the thermostat is connected to a wiring centre and the system change in cooling mode, the thermostat will be blocked and the heating icon will blink for all the time that the system will be in cooling mode.

### 6 WEEE DIRECTIVE APPLICATION - DIRECTIVE 2012/19 / EU



The crossed-out wheeled bin symbol indicates that within the European Union all electrical and electronic products at the end of their useful life must be collected separately from other waste.

Do not dispose of this equipment in unsorted municipal waste. Assign the equipment to the appropriate collection centers for electrical and electronic waste or return it to the retailer when purchasing a new equivalent type of equipment. Appropriate separate collection of equipment to start the subsequent recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and health due to the presence of hazardous substances in electrical and electronic equipment and resulting from an incorrect disposal or improper use of the same equipment or parts thereof, the separate collection also favors the recycling of the materials of which the equipment is composed.

The current legislation provides for sanctions in case of illegal disposal of the product.

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Bulevardi 46  
P.O. Box 115  
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