Installation
and user manual

Smart, app connectivity

Battery powered

Geo location

5 year guarantee

Unisenza PLUS - UFH Thermostat RF

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1 SAFETY WARNINGS

Pictograms used in this manual
To make reading clearer and more enjoyable, three types of symbols have been used in this manual to convey to the reader the meaning or importance of the information provided:

Hazard signs. Triangular framed shape. Indicate prescriptions relating to present or possible dangers.

Prohibition signs. Circular, barred frame. Indicate prescriptions relating to actions that must be avoided.

Mandatory signs. Full circle. Indicate information that is important to read and comply with.

Purpose of the manual
The purpose of this manual is to guide the qualified installer the installation, maintenance and proper and safe use of the equipment.

For this reason, it is mandatory for all personnel involved in the installation, maintenance and use of the equipment to read this manual.

Contact the Manufacturer if any points are unclear or difficult to understand.

This manual contains information regarding:
- Technical specifications of the equipment;
- Installation and connection instructions.

Intended use
The Unisenza Plus UFH Thermostat RF is a **Room Thermostats** battery powered with **Zigbee 3.0** ideally for an underfloor hydronic radiant heating/cooling system. It is used for wireless control of the wiring center which works with boiler, pump and actuators for different zones.

Its features are:
- Large negative LCD display with backlight
- Built-in rechargeable Li-Ion battery
- Micro-USB port for charging
- Support Heating and Heating/Cooling control

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- Built-in humidity sensor
- Operation modes include Schedule, Manual, Temporary override and OFF with frost protection
- 7-day, 5/2-day or single-day programming options
- Optimum start/stop control strategies for energy efficiency
- Selectable TPI or Span control algorithm
- Multi-functional input : Floor temperature sensor, external temperature sensor or occupancy sensor

Safety regulations

Before proceeding with any installation or use, it is necessary to thoroughly inspect the product. Make sure that all the information contained in this manual correspond exactly to the purchased equipment. In the event that differences are identified, it is necessary to contact the Manufacturer in order to obtain the assistance and specific technical information necessary to operate.

Read this manual carefully before the installation, use and maintenance of the product and keep it for any further future consultation by the various operators.

All installation, assembly, electrical connections to the mains and ordinary/ extraordinary maintenance must be performed **only by qualified personnel or technicians complying with the legal requirements**.

Installation, use or maintenance other than those specified in the manual may cause damage, injury or death, invalidate the warranty and relieve the Manufacturer of all liability.

Disconnect the equipment from the mains before installing or maintaining it.

Do not install the equipment outdoors. The product has been designed to be installed indoors, protected from bad weather, in places where the temperature is between 0 and +50 °C.

At the end of the installation it is necessary to instruct the user in the correct use of the equipment.

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2 TECHNICAL DATA

Unisenza Plus UFH Thermostat RF

Temperature Scale	°C or °F
Temperature Display Range	5 °C - 45 °C
Temperature Display Resolution	0.1 °C or 0.5 °C
Temperature Setting Range	5 °C - 40 °C
Temperature Setting Resolution	0.5 °C
Temperature Measurement Accuracy	+/-0.5 °C
Humidity Display Resolution	1% RH
Humidity Measurement Accuracy	+/-5% @20%-80%RH, +/-8% @other range
Firmware update	Over the air firmware update capability
Wireless Communication	ZigBee 3.0, 2.4GHz
Power Supply	Rechargeable Li-polymer battery 1500mAh
Battery Charging	Micro USB port (Type B) 5V +/-0.5V Charging current < 200mA Time to fully charge battery > 17hrs
Operating Environment	Indoor, residential & commercial
Operating Temperature	0 °C – 55 °C
Storage Temperature	-20 °C – 60 °C
Operating/Storage Humidity	5-95% RH, non-condensing
Dimensions	86(W) x 86(D) x 11(H) mm (with backplate)
Ingress Protection Rating	IP30
Regulation	CE, UKCA, RED
Environmental Requirement	RoHS compliance

The **Unisenza Plus UFH Thermostat RF** complies with the following European directives:

- RED directive 2014/53/EU
- ROHS directive 2011/65/EU
- REACH (EC 1907/2006)

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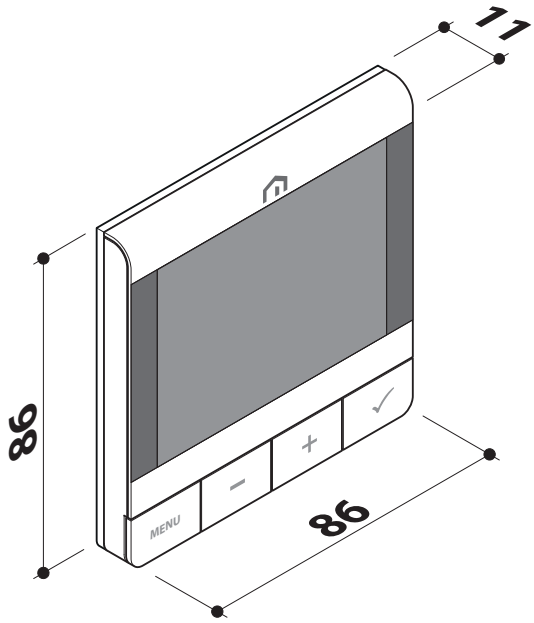
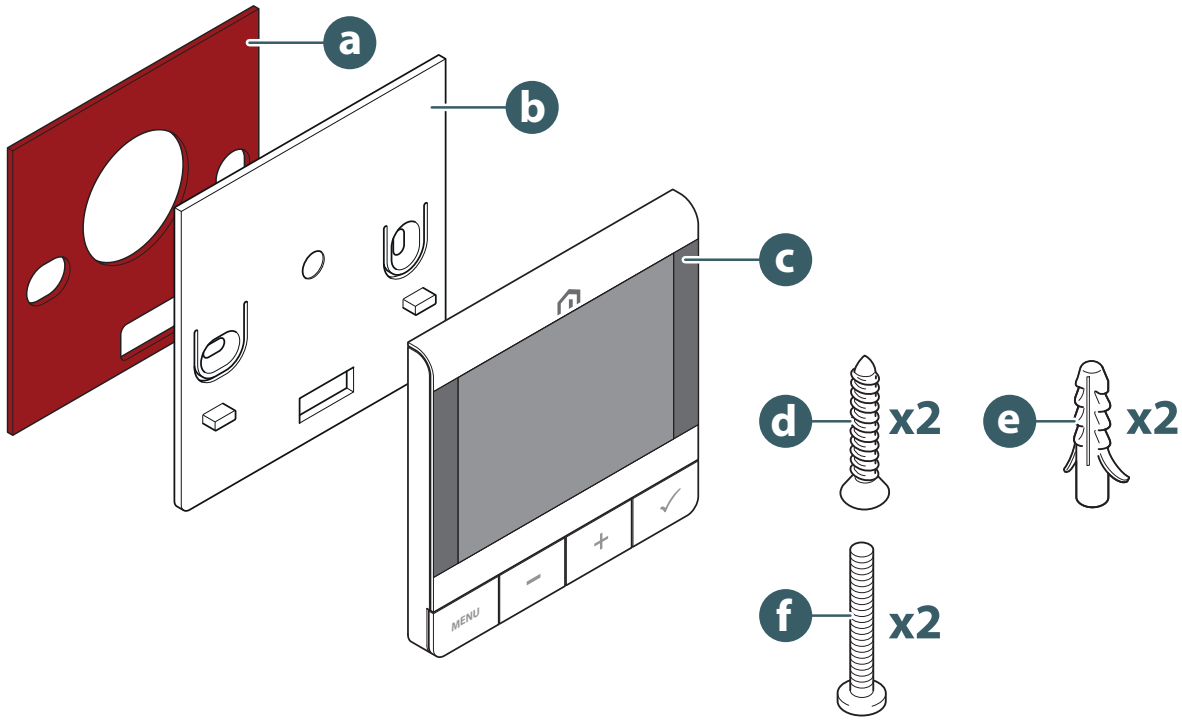
3 DIMENSIONS



4 PACK CONTENTS



a. Double-sided tape
b. Wall mount bracket
c. Unisenza Plus UFH Thermostat RF
d. Plate fixing screw
e. Fixing wall plug for plate fixing
f. Fixing screw for backbox

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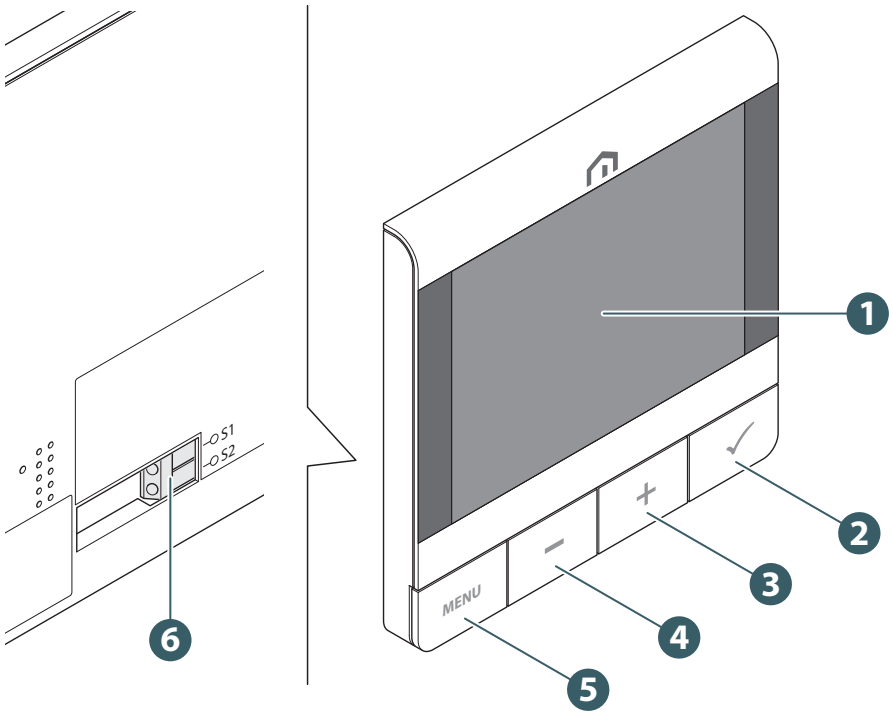
5 OVERVIEW

Unisenza Plus UFH Thermostat RF



1. LCD display
2. Confirm button
3. Button +
4. Button -
5. Menu / Back button
6. Auxilliary sensor connection

Button usage

Button	Function
Menu / Back button	In Main screen: Press to go to Menu In Menu: Press to go back to main screen or previous menu, press and hold to go to main screen without saving the settings at any time.
Button -	Decrease parameter value / Moving on the menu in downward direction.
Button +	Increase parameters value / Moving on the menu in upward direction.
Buttons + and -	Long press Up and Down buttons for 4 sec – lock or unlock the thermostat.
Confirm button	Confirm Value / Go to next menu / Save settings. In menu: press and hold for 4 sec to go back to main screen with saving the settings at any time. In Main screen: Go to OFF mode. Before joining network: Shutdown / Power up the thermostat

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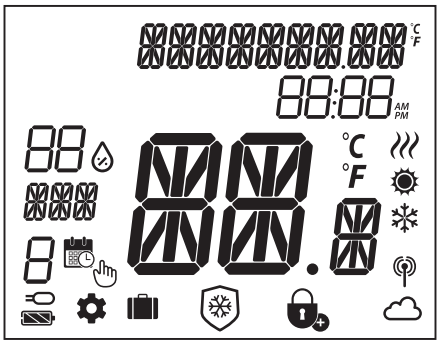
Display icons



Icon	Description
	Text Bar (9 Character)
	Time
	Humidity
	Weekday
	Schedule Number
	Calendar
	Permanent Hold
	External connection (via S1/S2 input)
	Setting
	Holiday Mode
	Temperature Display
	Heating
	Cooling
	Demand (heating or cooling) indication
	RF Connection indicator
	Internet Connection Indicator
	Lock
	Frost Protection (OFF mode)
	Battery status

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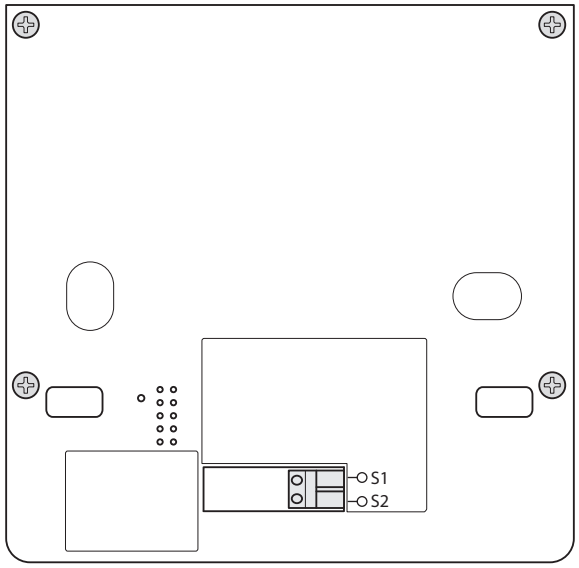
Terminals Description



Terminal	Function	Requirement
S1 / S2	- Floor Temperature Sensor - External Temperature Sensor - Occupancy Sensor	Wire size 0.14 mm^2 to 1.0 mm^2

Temperature sensor type: NTC 10k Ohm B 25/50 = 3950K, R 25 = 10kOhm.

6 APPLICATIONS

The **Unisenza Plus UFH Thermostat RF** can be used for the On/Off control of Heating or Cooling in an underfloor heating/cooling system, through the integration with a **wiring center Unisenza Plus** on a wireless Zigbee network.

7 DOWNLOAD APP FOR ELECTRONIC REGULATOR MANAGEMENT

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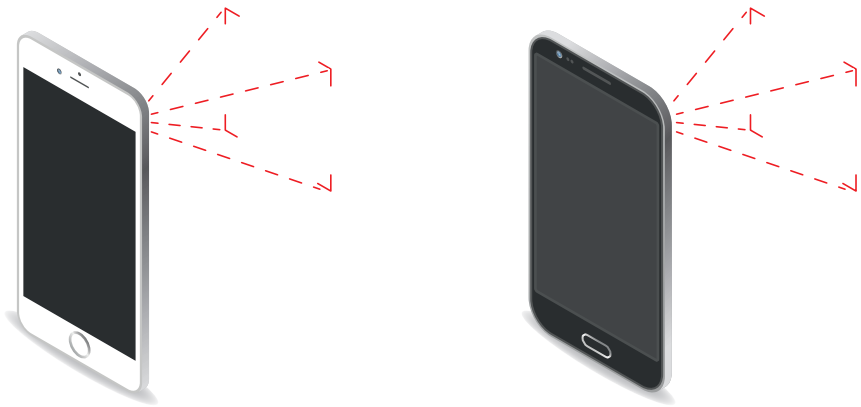
The management of the **Unisenza Plus UFH Thermostat RF** is also possible through a dedicated APP that allows its configuration and the management of the devices you will pair.

In order to download the **APP**, you need to connect to the **STORE** of your device used for configuration and install the **Unisenza Plus**.

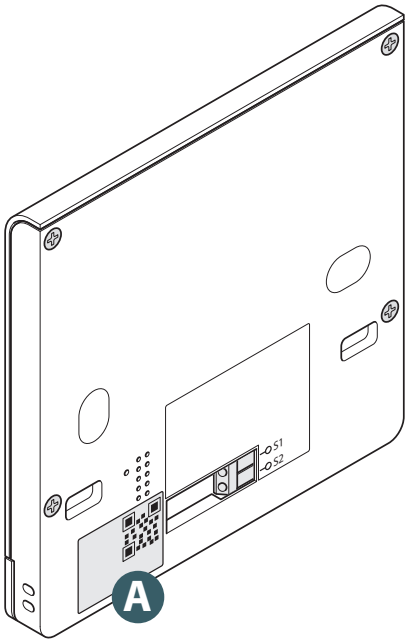
Or, again using the device, you can directly access the installation page using the following **QR codes**, again depending on the operating system.

Download on the App Store

GET IT ON Google Play



8 NAMEPLATE



At the rear of the **Unisenza Plus UFH Thermostat RF** there is a sticker **(A)** which indicates the device data.

QR code availability for future feature.

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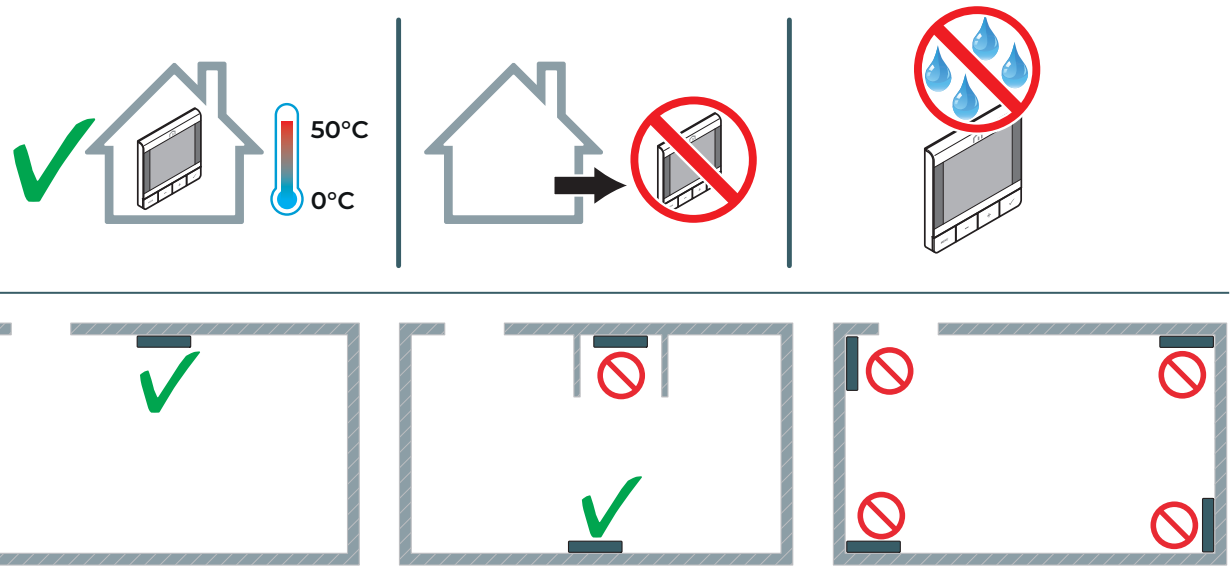
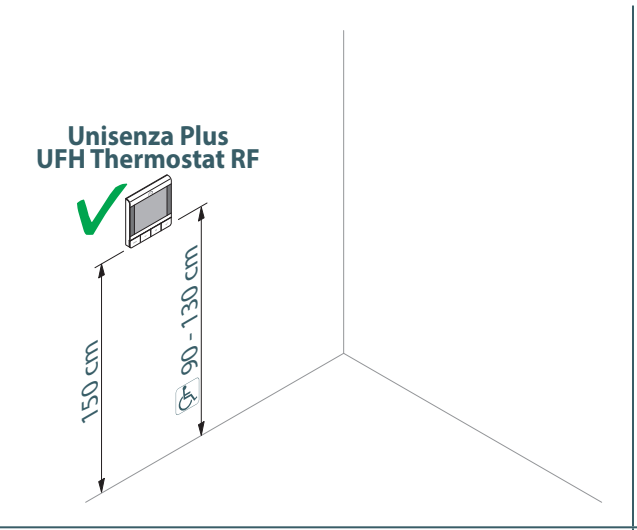
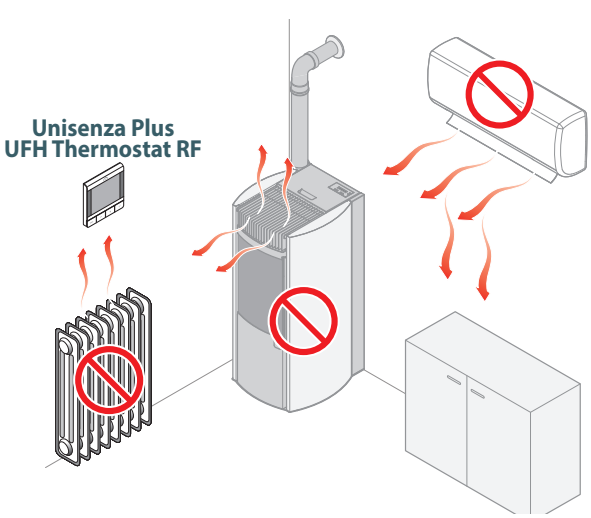
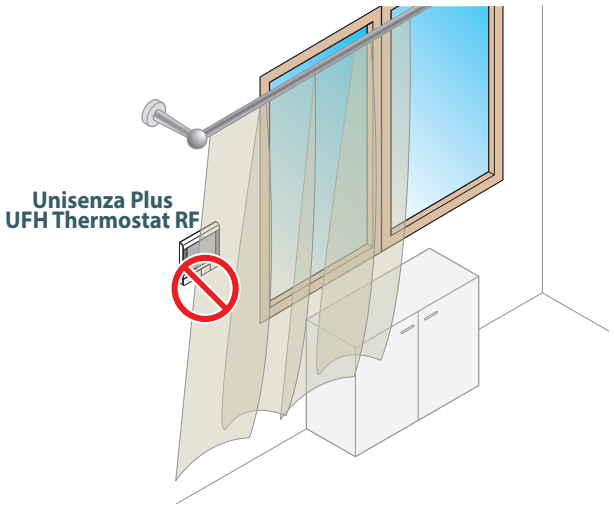
9 INSTALLATION

Recommendations for a correct installation









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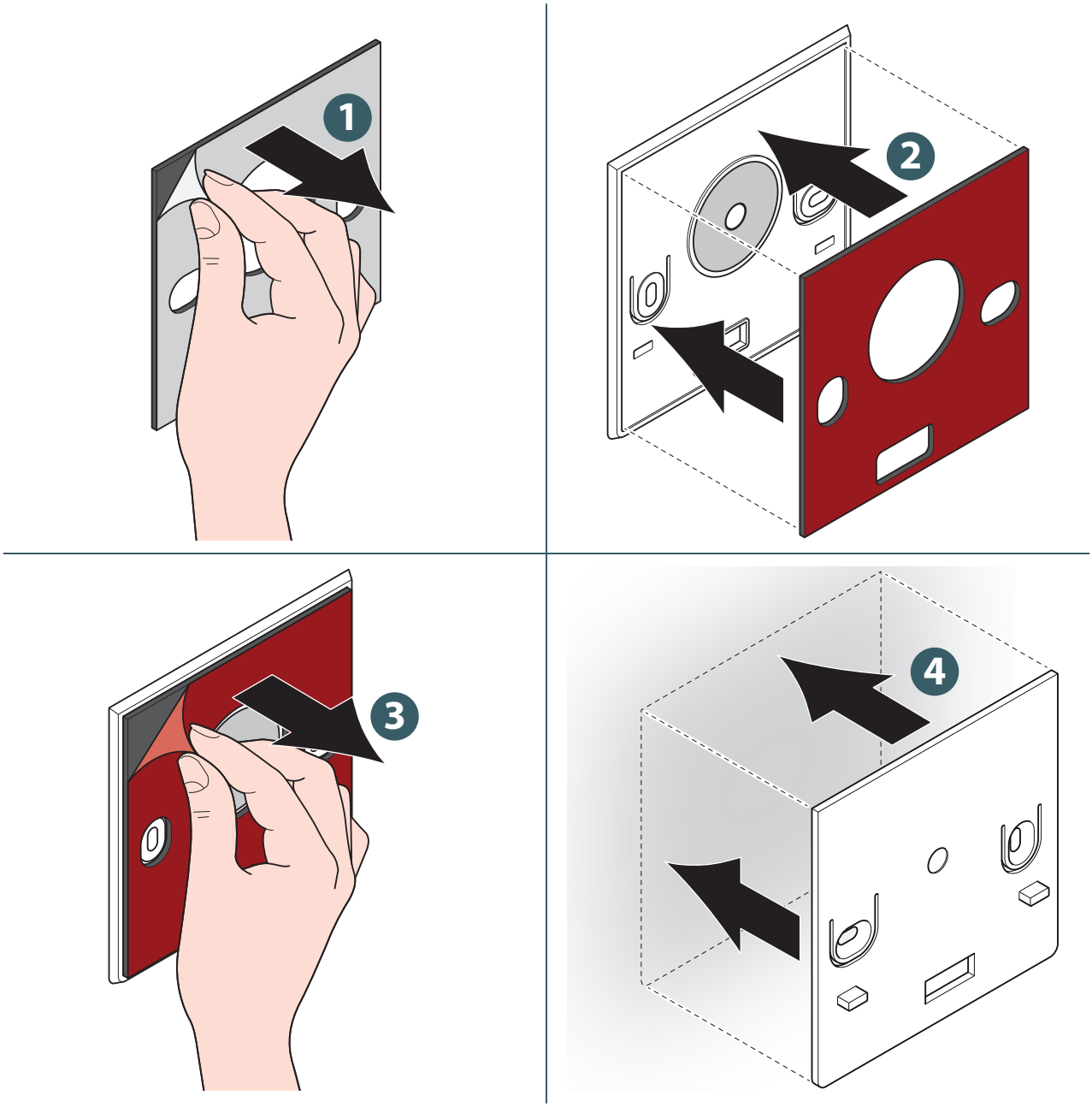
Fixing the bracket to the wall with double-sided tape



After fixing the bracket to the wall, wait a couple of hours before applying the thermostat.

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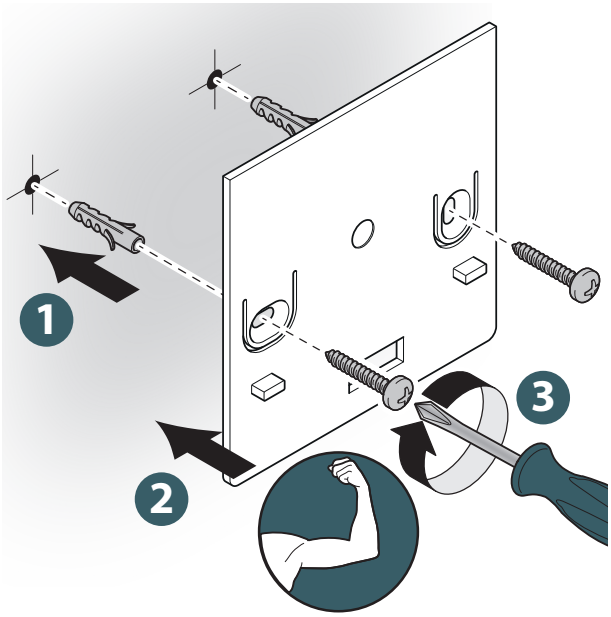
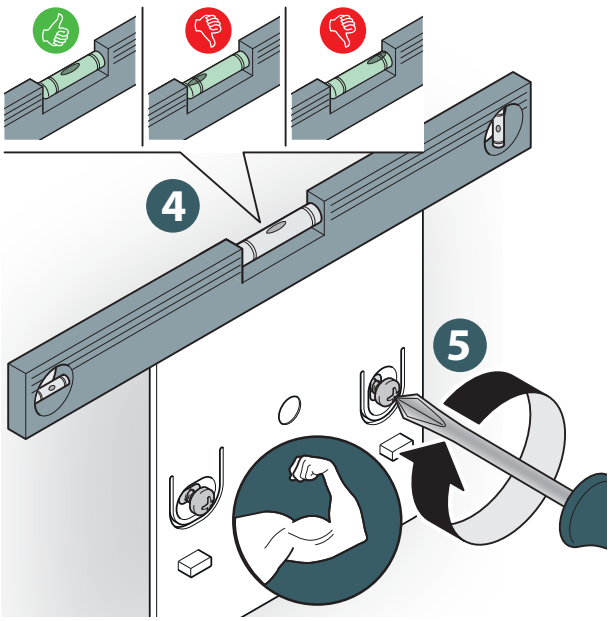
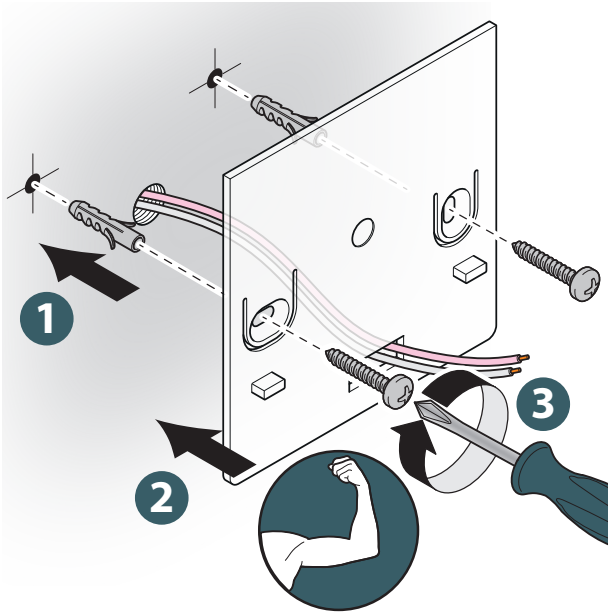
Fixing the bracket to the wall with screws

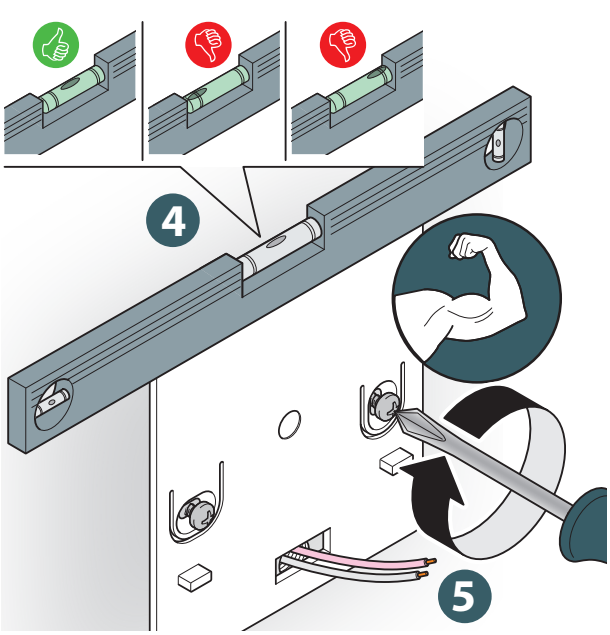
Without a temperature sensor.





With a temperature sensor.





When fastening, be very careful not to use too much force when tightening the supplied screws.

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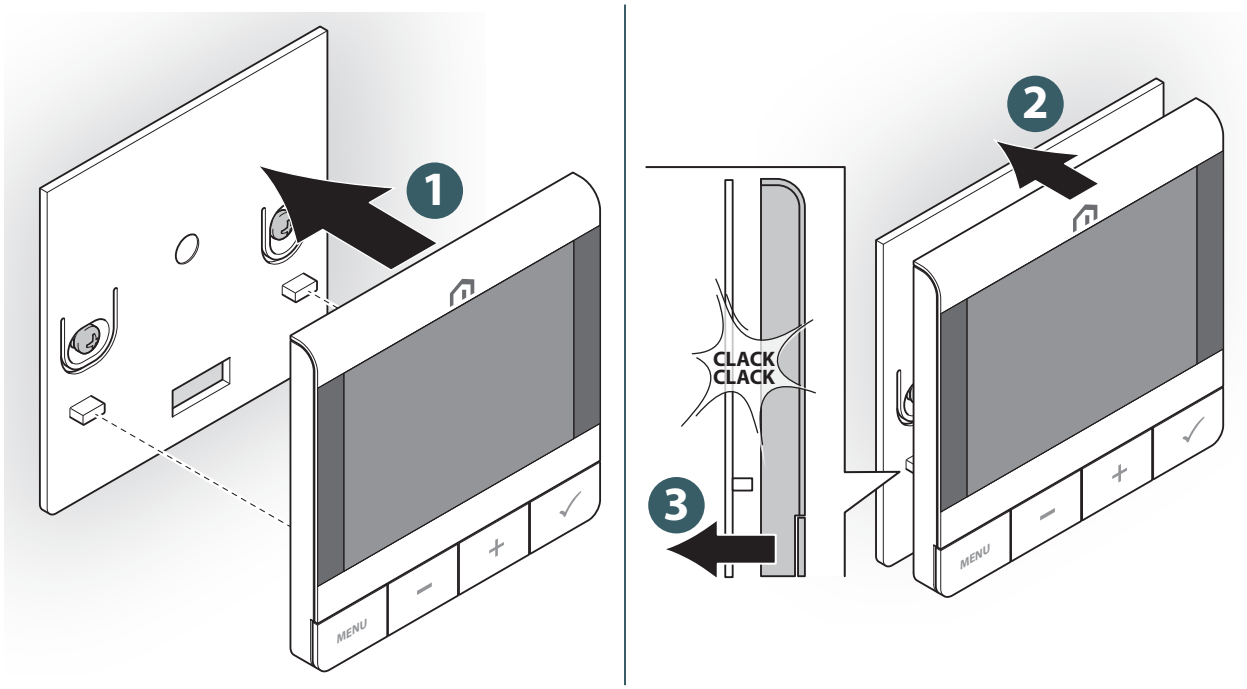
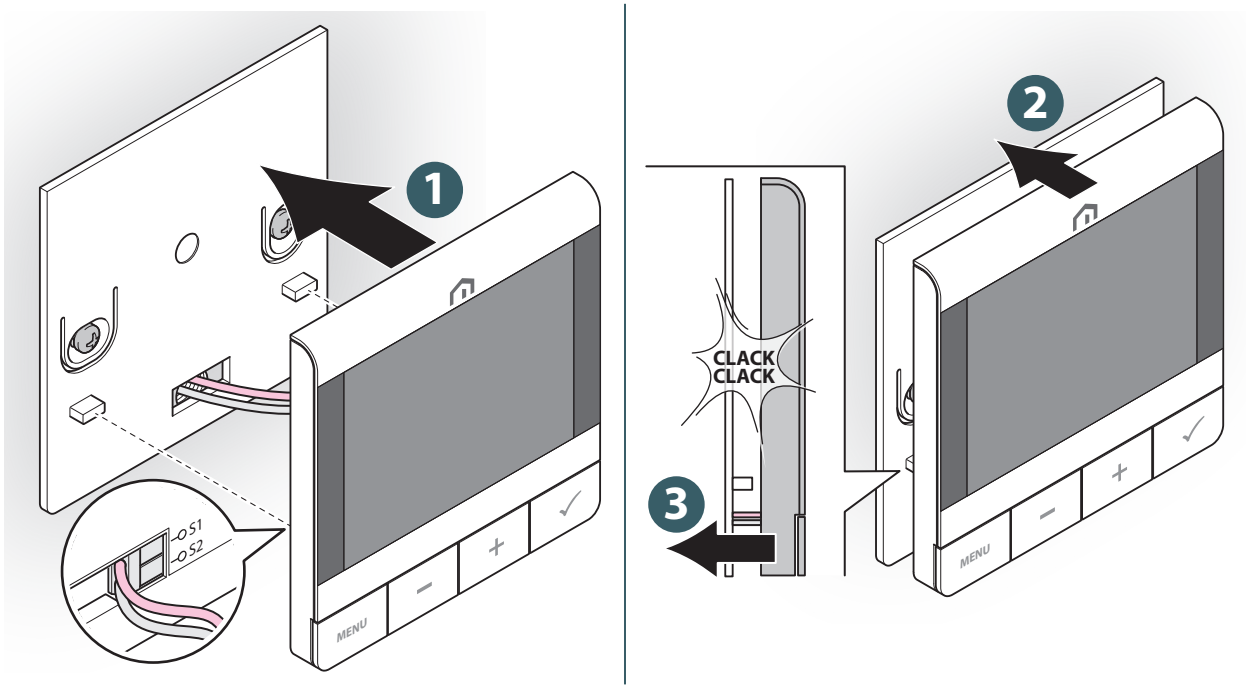
Fixing the thermostat to the bracket

Without a temperature sensor.



With a temperature sensor.



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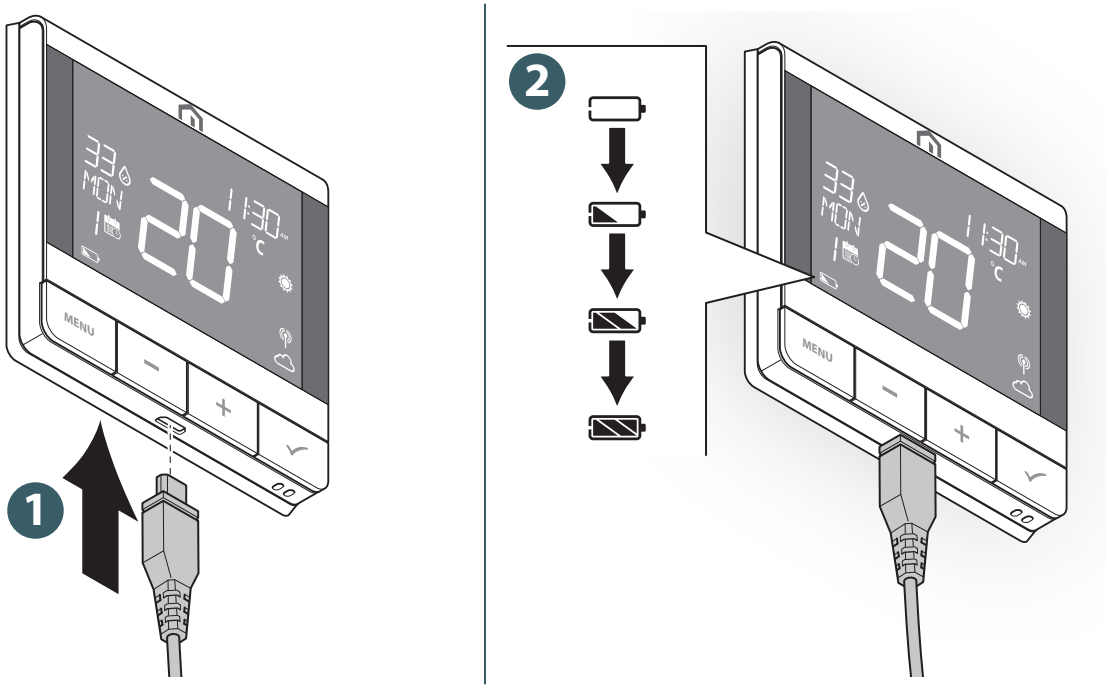
10 USE

Li-on battery charging

New **Unisenza Plus UFH Thermostat RF** is partially charged, however, we recommend you to fully charge the battery before use.

Connect charger (not included) to micro-USB port which is at the bottom of thermostat to charge the device.



The battery icon animates when charging.

The battery level is indicated by one of these icons / / / .

When the battery level is at critical low, flashes.

Charging to full battery level may take up to 17 hours.

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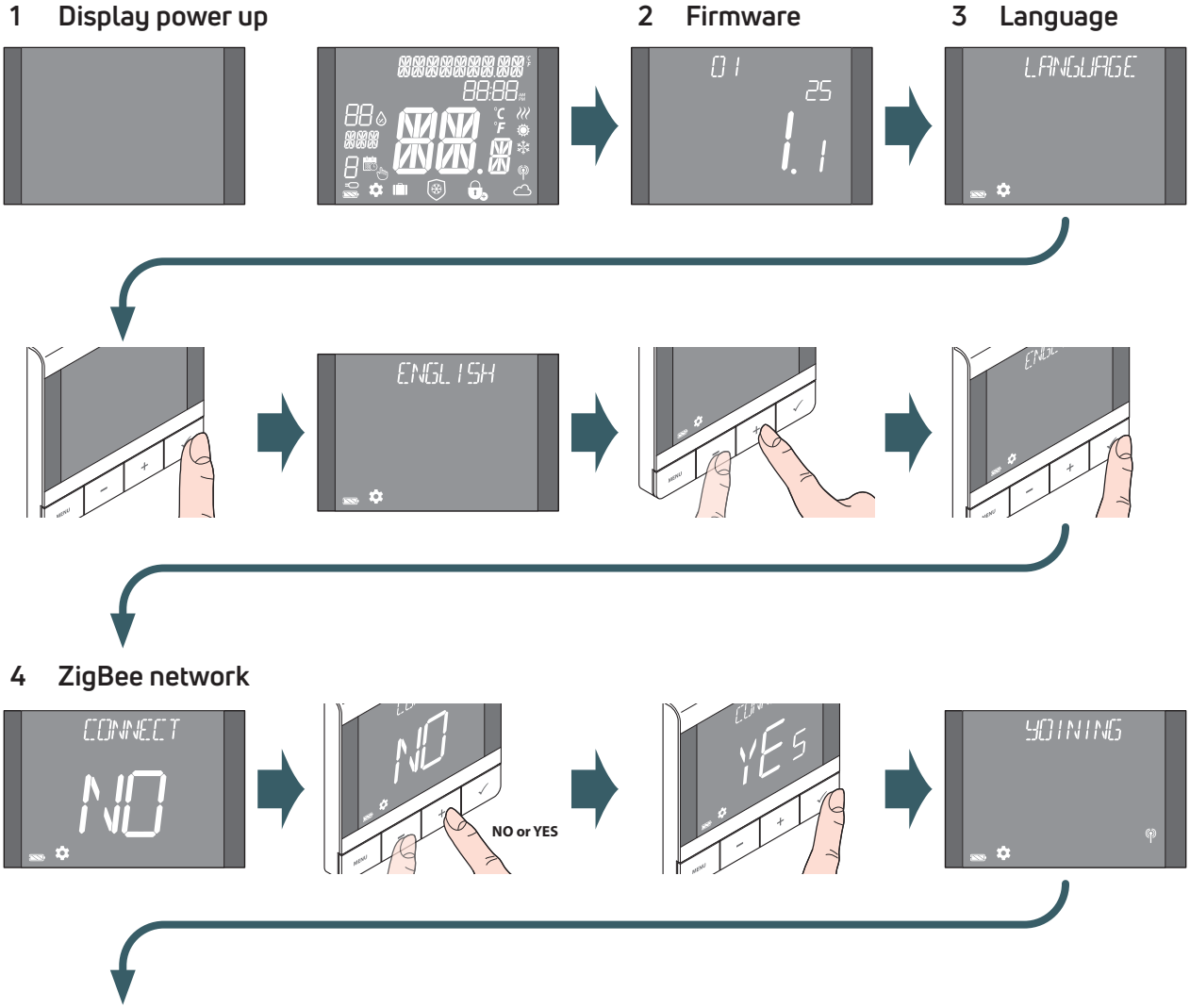
Main screen operation

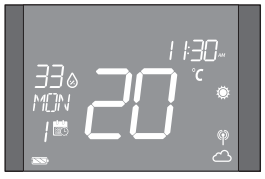
The LCD backlight is Off during stand by in normal operation. Press any key to turn on the LCD backlight before performing other user operations as descried below. The LCD backlight will be turned off automatically when no key press for 15 seconds.

Power up

The ignition of the **Unisenza Plus UFH Thermostat RF** takes place by inserting it into the housing fixed to the wall.

Below what appears on the display.





If "**YES**" was chosen at the "**CONNECT**" request, remember to activate the association mode in the **Unisenza Plus Gateway**, to do this consult the Gateway manual. If "**NO**" has been chosen, it will be possible to pair the device at a later time by accessing the menu: **ADMIN SETTING→ CONNECTION→ NETWORK→ JOIN**.

It is also possible to associate the thermostat from the **APP** using the "**ADD NEW DEVICE**" function.

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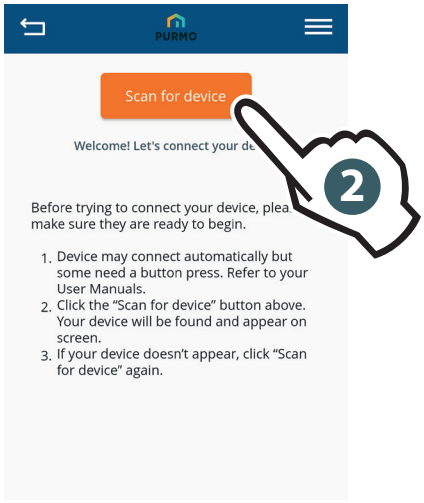
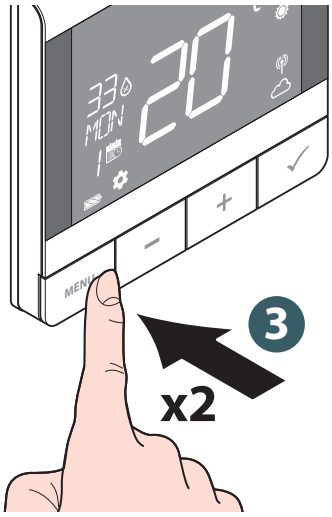
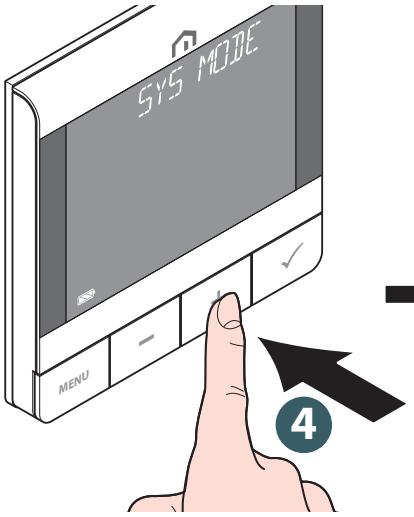
Pairing to Unisenza Plus Gateway

With APP

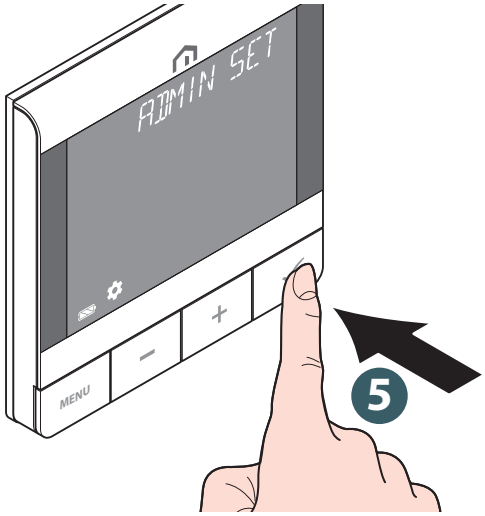
The association between the **Unisenza Plus UFH Thermostat RF** and the **Unisenza Plus Gateway** can be done through the system management **APP**.
To proceed with the association you need to have already installed and configured the **Gateway**.

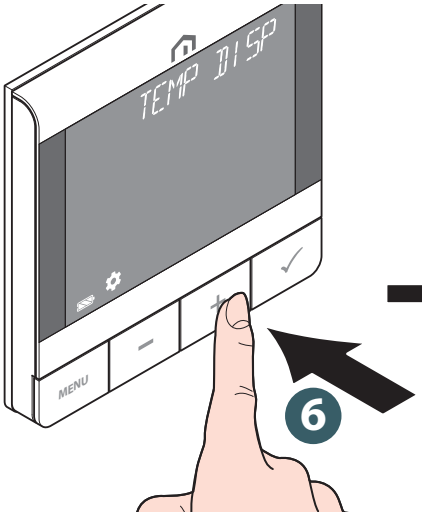






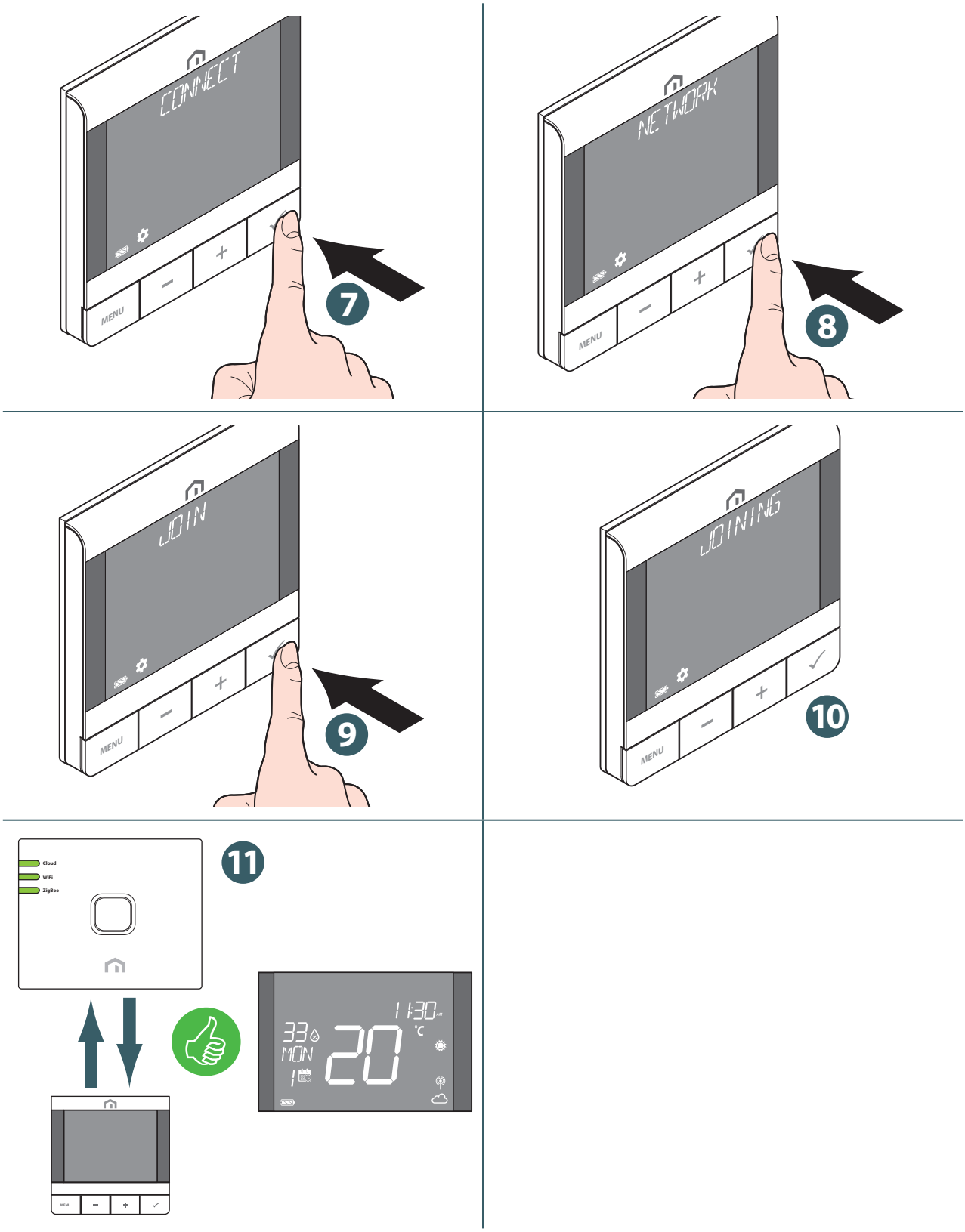
SYS MODE
SCHEDULE
USER SET
ADMIN SET
LANGUAGE





TEMP DISP
SYS TYPE
S1/S2
VLV PROT
CONTROL
MIN SP
MAX SP
CONNECT
PIN CODE
DEV INFO
RESET

EN

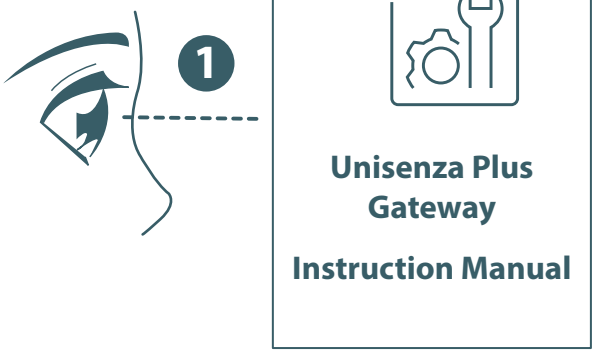


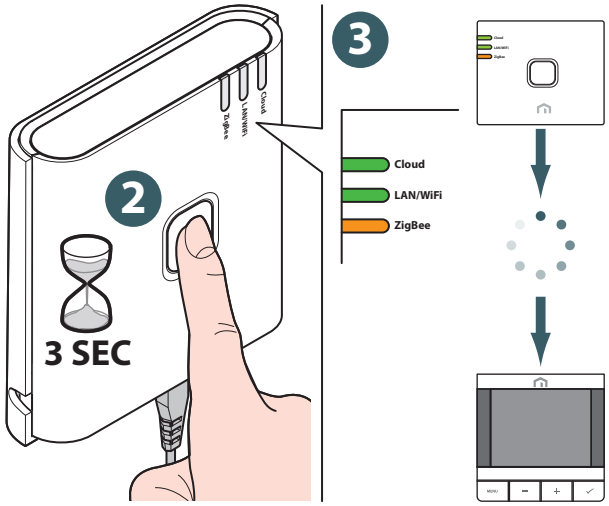
If you want to associate a **Unisenza Plus UFH Thermostat RF** that was previously associated with another Gateway, it is necessary to perform a reset to the factory settings of the electronic regulator before making the new association.

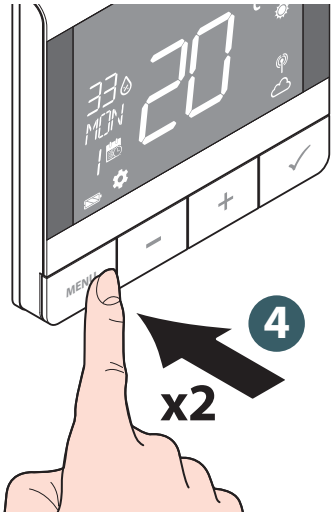
EN

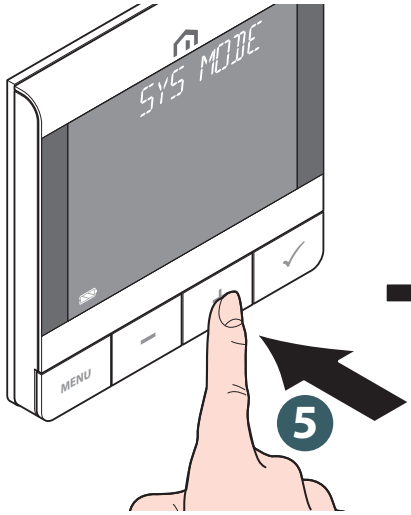
Without APP

The association between the **Unisenza Plus UFH Thermostat RF** and the **Unisenza Plus Gateway** can also be made directly between the two devices.
To proceed with the association you need to have already installed and configured the **Gateway**.

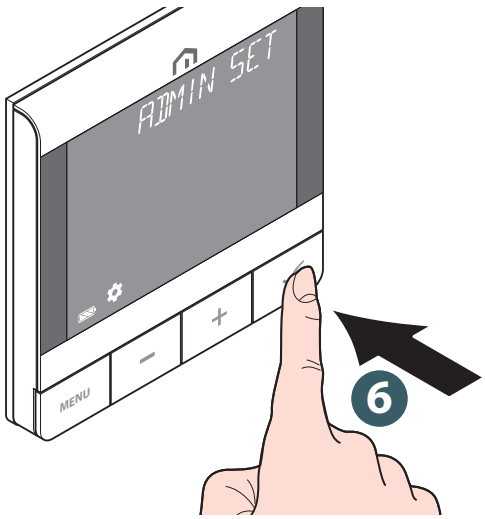


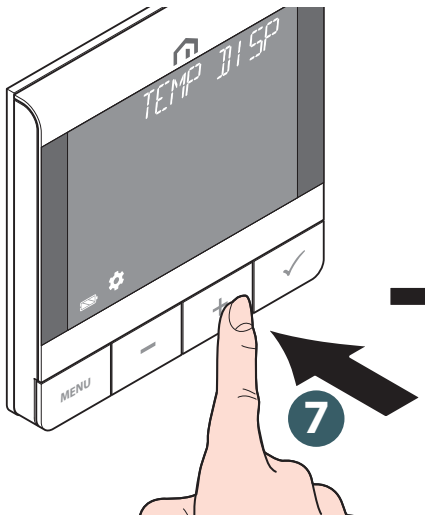






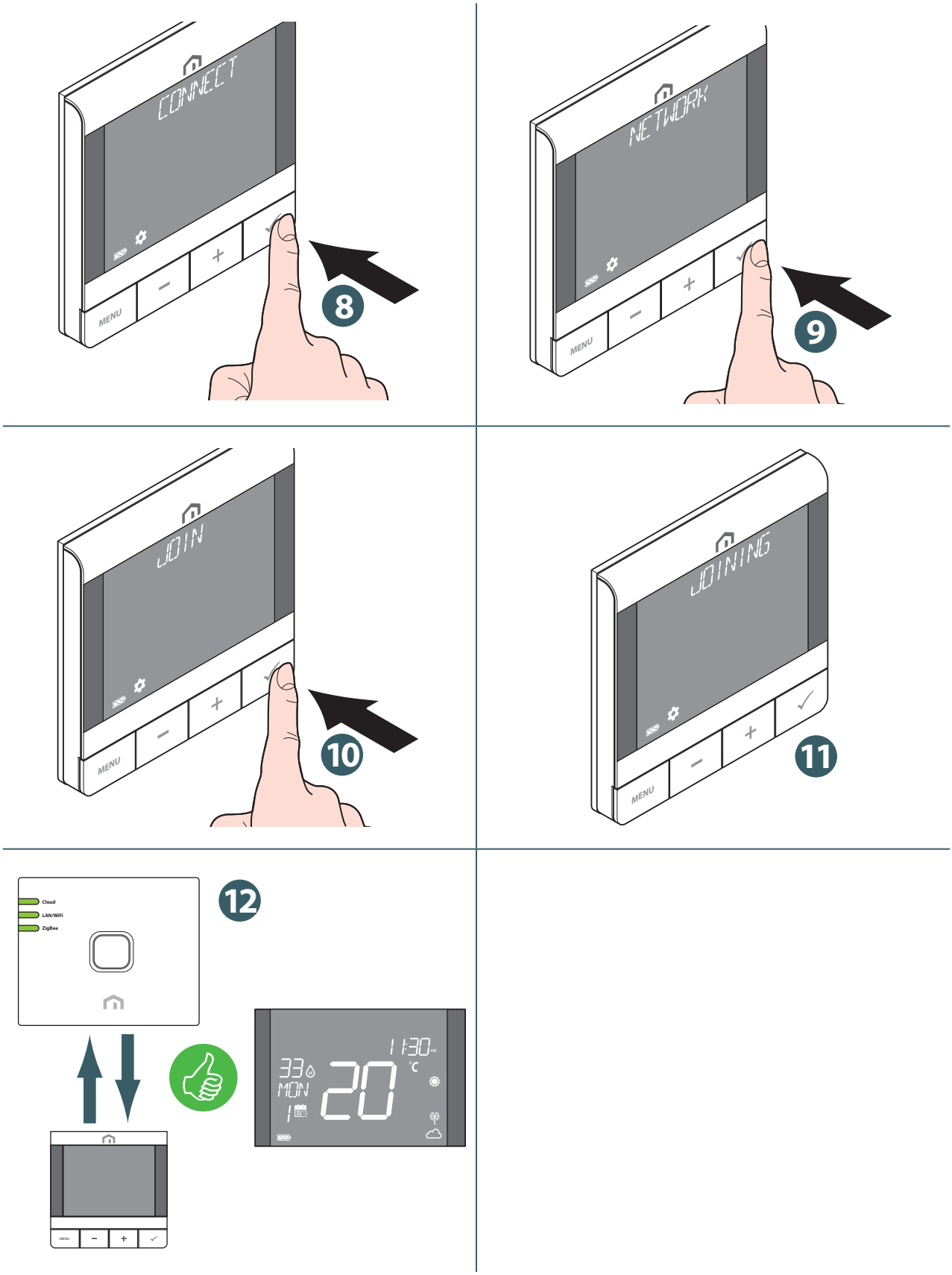
SYS MODE
SCHEDULE
HOLIDAY
USER SET
ADMIN SET
LANGUAGE





TEMP DISP
SYS TYPE
S1/S2
VLV PROT
CONTROL
MIN SP
MAX SP
CONNECT
PIN CODE
DEV INFO
RESET

EN



If you want to associate a **Unisenza Plus UFH Thermostat RF** that was previously associated with another Gateway, it is necessary to perform a reset to the factory settings of the electronic regulator before making the new association.

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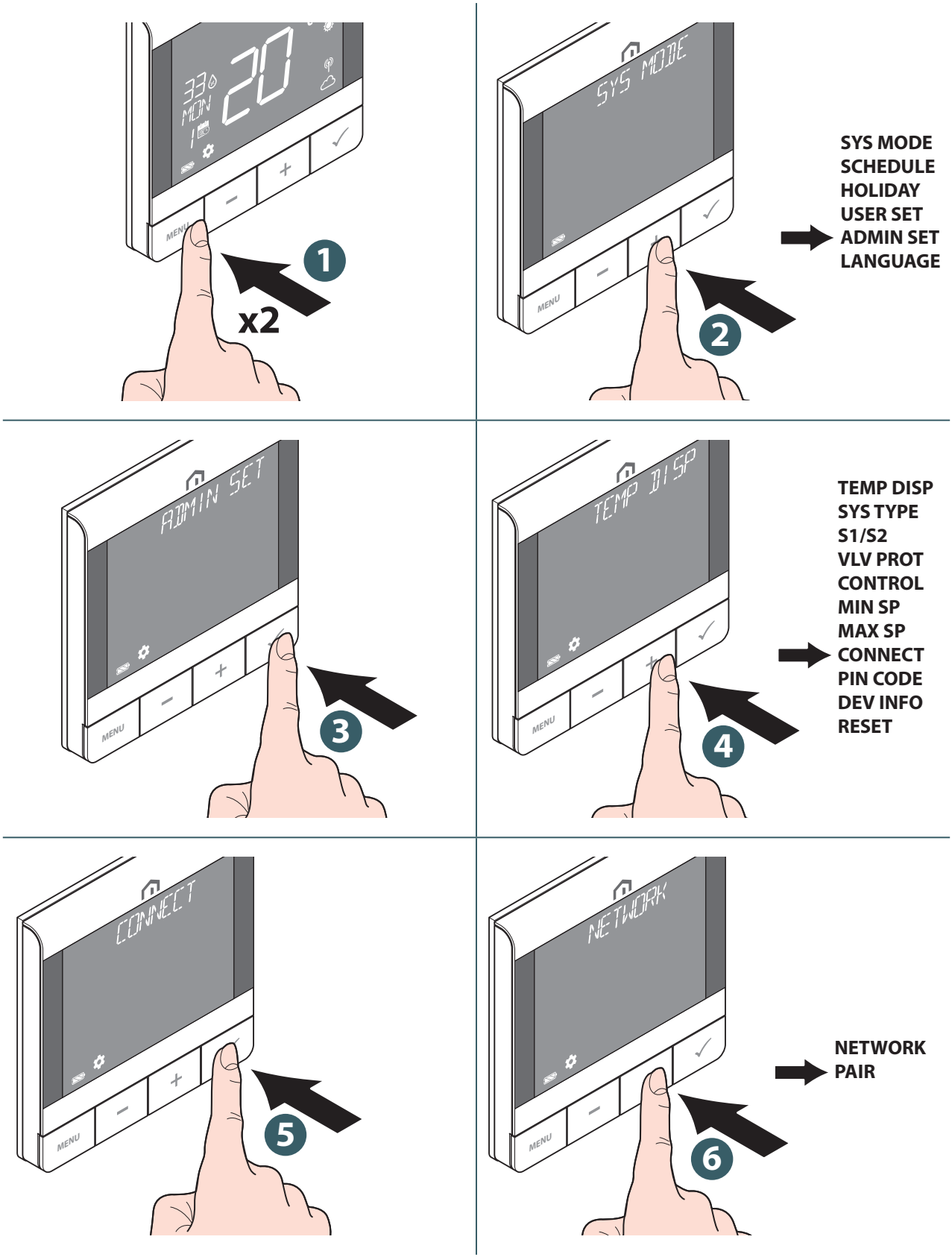
Connecting with underfloor heating/cooling wiring center

After the **Unisenza Plus UFH Thermostat RF** has joined a **Unisenza Plus network**, it can be paired with a **Unisenza Plus Wiring Center** up to 6 different zones. The pairing can be done on the App directly or by activating the pairing mode locally without app.



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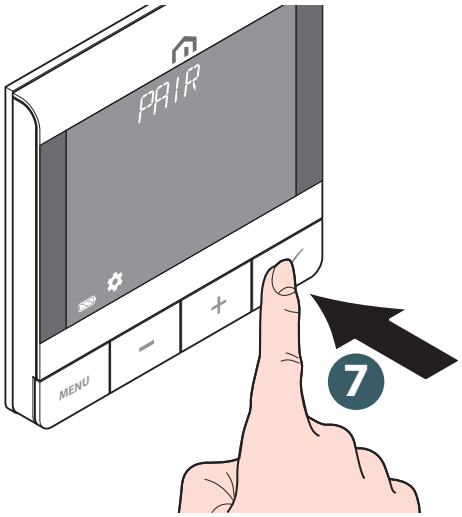
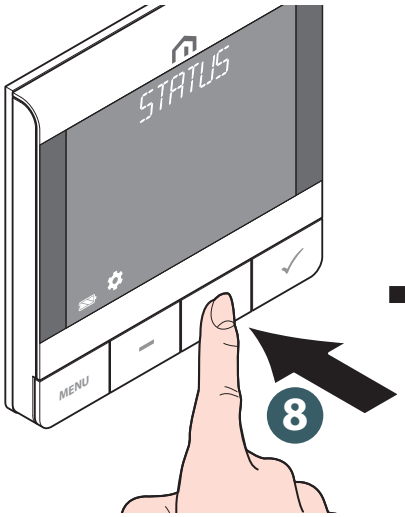
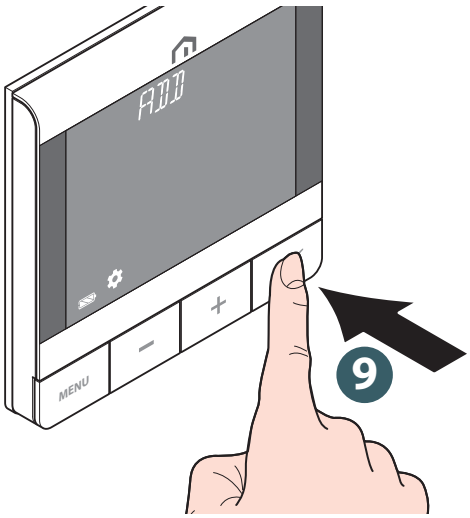
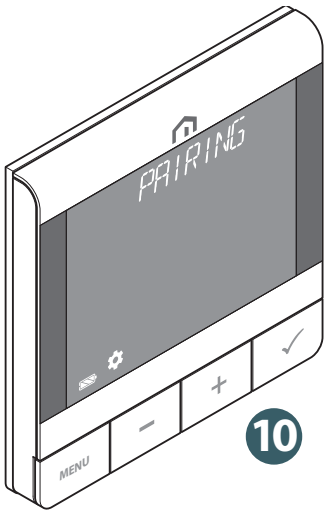
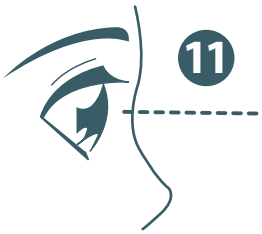




STATUS
IDENTIFY
ADD
REMOVE







Wiring Centre

Instruction Manual

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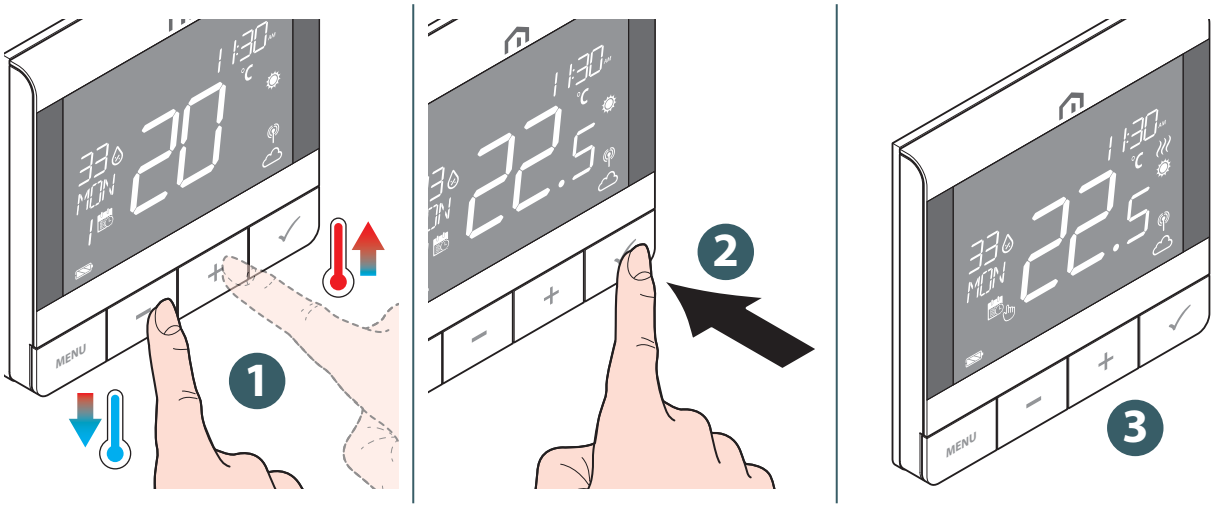
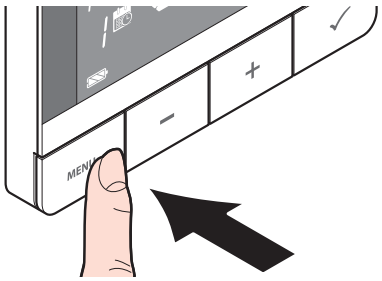
Change set point



The icon flashes when Optimum Start/Stop is active or Valve Protection operates.

Change operation mode



Press and hold **MENU** button to switch between **Schedule/Temporary override** and **Permanent Hold mode**.

Icon	Mode	Explanation
	Permanent Hold mode	The set point is kept constant regardless of the schedule. To modify the set point, use the **+** and **-** keys.
	Schedule mode	The set point is the one established in the programming and the number of the planning program is indicated.
	Schedule/Temporary override	The set point set in the programming is modified using the **+** and **-** keys and remains active until the next programming arrives.

Temporary scheduling mode overrides the scheduling **set point temperature** and will remain active until the next scheduling time slot arrives. Subsequently the temperature will be the one established according to the planning on the **APP**.

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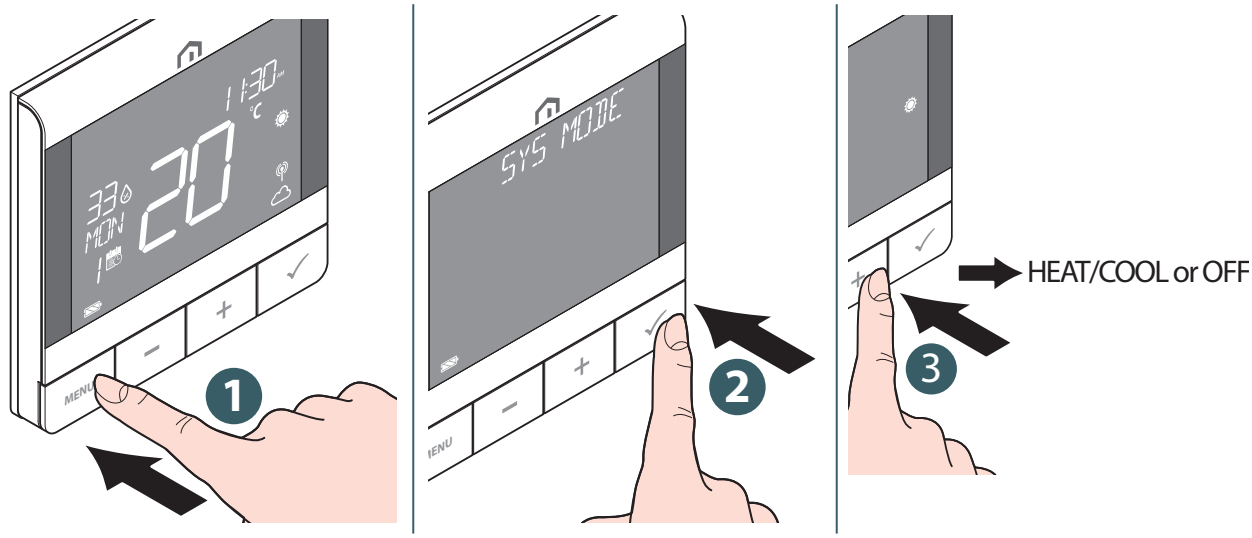
Change system mode



Press **Menu/Back button** to return to main screen.

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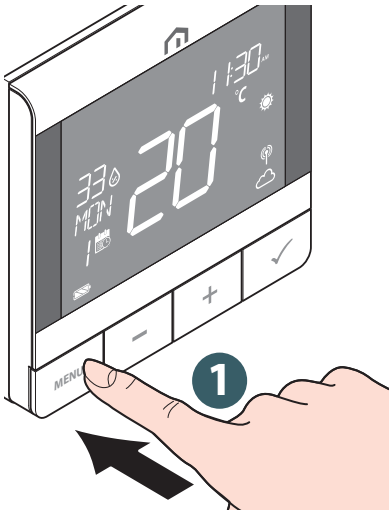
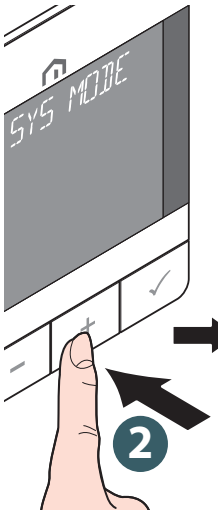
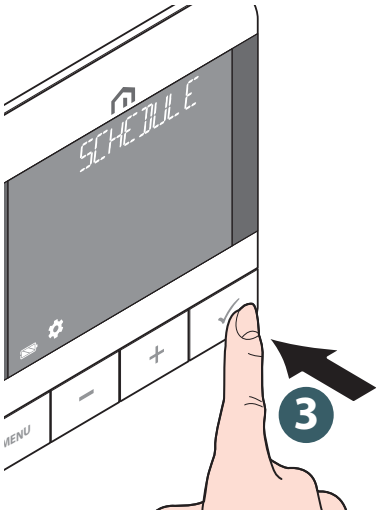
Schedule setting

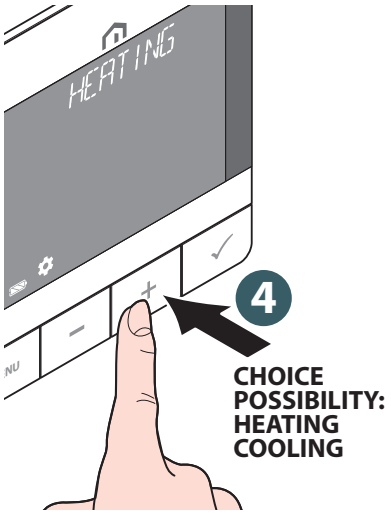
Schedule for different mode **(HEATING, COOLING)** can be defined separately here. Three schedule program are available **(7 DAY / SINGLE / 5+2 DAY)**.





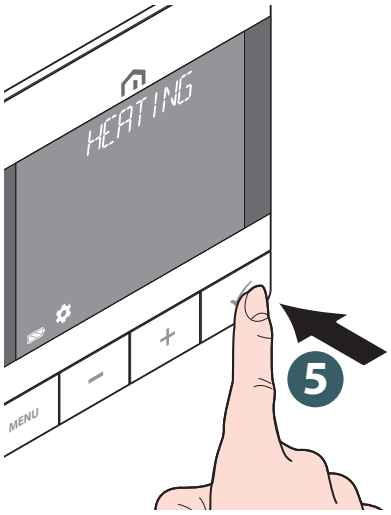
SYS MODE
SCHEDULE
USER SET
ADMIN SET
LANGUAGE

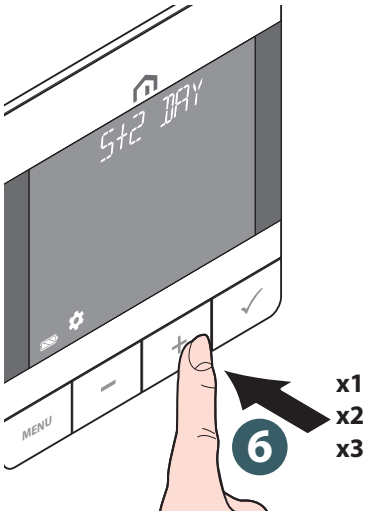




CHOICE POSSIBILITY:
HEATING
COOLING

HEATING	When SYS MODE is HEAT, temperature set point is set for each time slot
COOLING	When SYS MODE is COOL, temperature set point is set for each time slot





x1
x2
x3

x1 5 + 2 DAYS	x2 SGL DAYS	x3 7 DAYS
MON TUE WED THU FRI SAT SUN	MON TUE WED THU FRI SAT SUN	Every day run the same schedule

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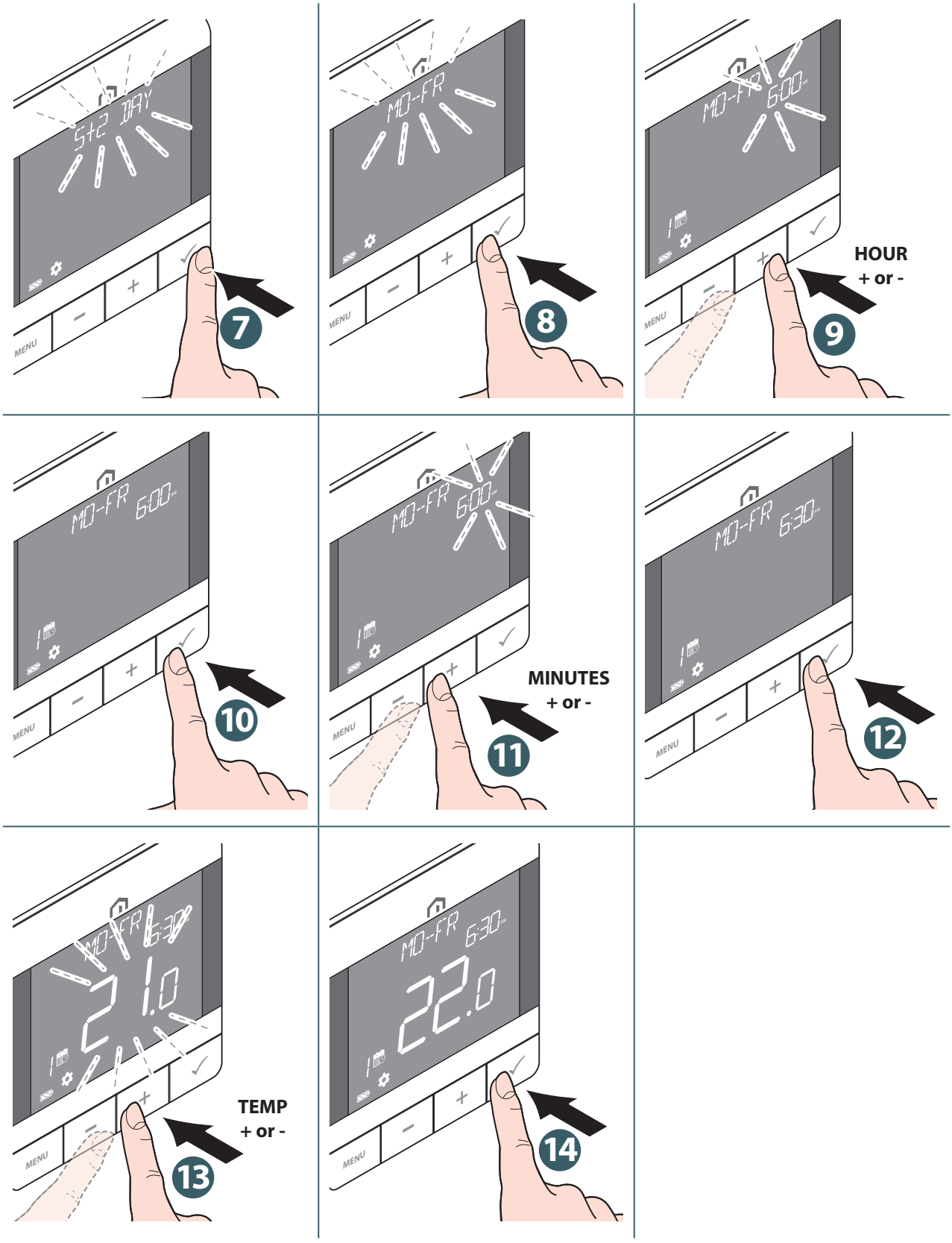

Repeat above procedure to set up to 6th time slot.

Press **Menu/Back button** to return to main screen.

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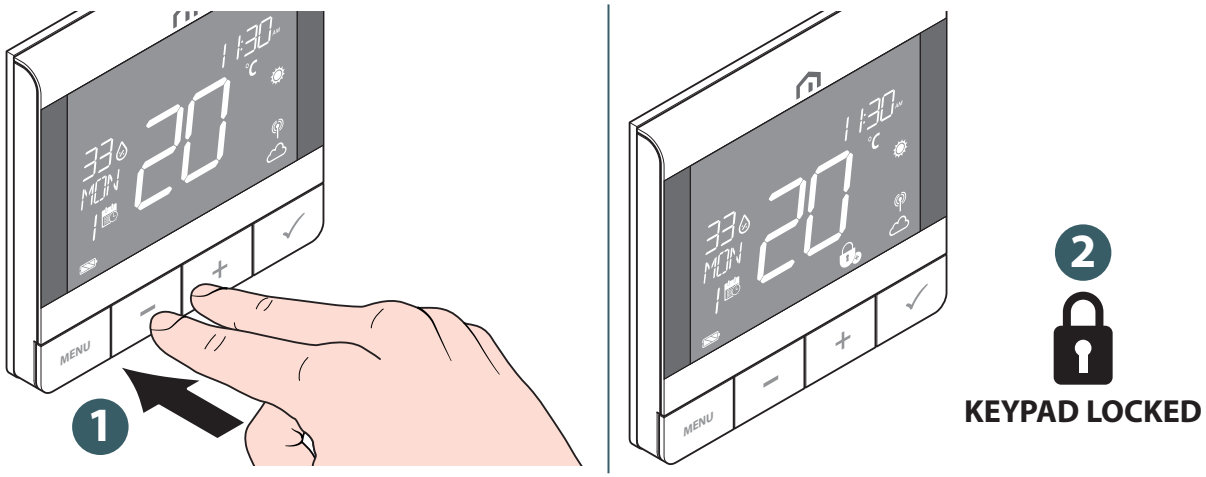
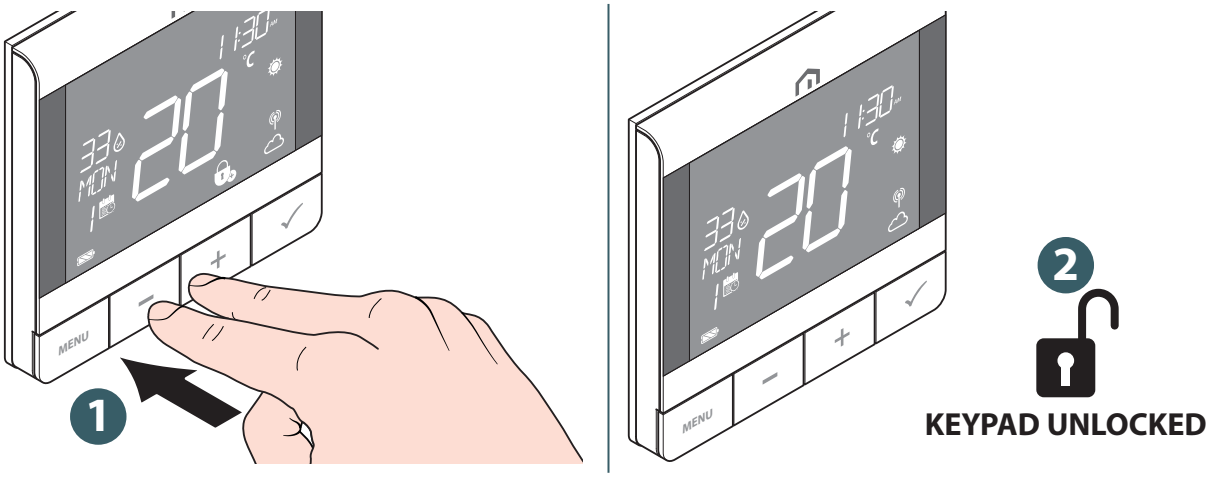
Key lock

Lock the keypad



Unock the keypad



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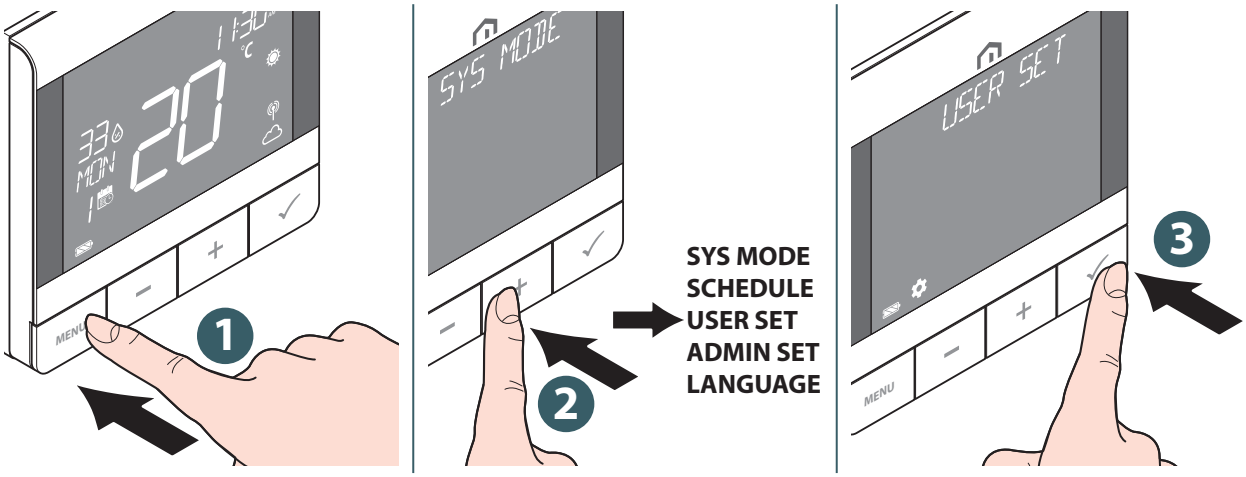
User setting



The editable settings are:

Timedate	**Time**	12hr or 24hr display format
	Clock	Set hour and minute
	Date	Set year, month and day
	Dst	Daylight saving time on or off
	Time disp	Display time on device or not
	Week display	Weekday display by number or by word format
Temp unit		Select temperature display unit in celcius or fahrenheit
Tr calib		Temperature calibration (up to +/- 2.5 °C)
Flr temp		(available when "S1/S2" is enabled for "FLOOR" Floor Sensor). Select to display floor temperature on the text bar.
Optimize	**Start**	Set optimum start On or Off. When Optimum Start is On, thermostat may turn On HEATING earlier to achieve the set temperature at the time defined in the schedule
	Stop	Set optimum stop On or Off. When Optimum Stop is On, thermostat may turn Off HEATING earlier to achieve the set temperature at the time defined in the schedule
Frost sp		Define Frost Protection set point
Reset	**Reboot**	Perform a power cycle reset (all settings are kept unchanged)
	User	Reset user settings, SYS MODE and schedule back to default value. It returns to USER SETTINGS screen after reset.

Press **Menu/Back button** to return to main screen.

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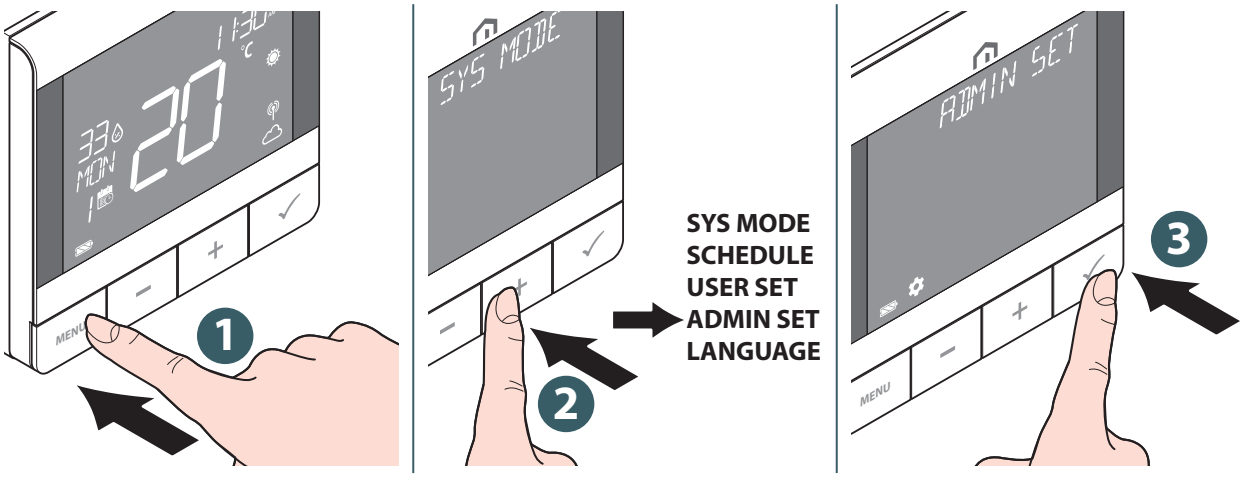
Admin setting



The editable settings are:

Temp disp		Select temperature display interval at 0.5°C (1°F) or 0.1°C (0.2°F).
Sys type		Select HEAT ONLY or H/C by WC.
S1/S2 Enable or disable the use of S1/S2 input for connecting to different sensors. S1/S2 input can work in various configurations	**Floor** **(Floor Sensor)**	S1/S2 input is used for floor temperature sensor connection (eg. Temperature sensor with NTC 10k Ohm thermistor). Thermostat maintains temperature in the room and additionally (by floor sensor) prevents floor against overheating or overcooling which may cause discomfort or floor damage. Below temperature limit can be set. • **HIGH LMT** (Floor high limit temperature for heating): Range from 11°C to 45°C • **LOW LMT** (Floor low limit temperature for heating): Range from 6°C to 40°C • **PROT LMT** (Floor protection limit temperature for cooling): Range from 6°C to 45°C
	External **(External sensor)**	S1/S2 input is used for external temperature sensor connection (eg. Temperature sensor with NTC 10k Ohm thermistor). When an external temperature sensor is connected, the thermostat will display temperature measured by this sensor and will ignore the internal built-in sensor. An external temperature sensor can be used when thermostat is controlling room to which it doesn't have access. If no external sensor is connected and S1/S2 input is enabled for EXT SENSOR, the temperature will not be displayed.
	Occupancy **(Occupancy Sensor)**	S1/S2 input is used for connecting an external volt-free contact (e.g. hotel card, occupancy sensor). When S1/S2 contacts are closed, thermostat is maintained in current operation model. When S1/S2 contacts are opened, thermostat activates standby mode and Text Bar displays "UNOCCUPY".
Vlv prot		Select valve protection mode On or Off. If the relay is not turned On for a week, the thermostat will turn On the heating to move the actuators for less than 3 minutes time, to avoid the valve getting stuck or jamming.

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Control Select which control algorithm mode is used for room temperature control	**Tpi ufh**	(available when SYS MODE is "HEAT"): algorithm designed for underfloor heating (for heating systems with high inertia).
	Tpi rad	(available when SYS MODE is "HEAT"): algorithm designed for radiator heating.
	Tpi elec	(available when SYS MODE is "HEAT"): algorithm for electric heating (for heating systems that heat up quickly an cool down quickly).
	Span ¼° c (span ½° f)	
	Span ½° c (span 1° f)	
Min sp	**Heat**	Set minimum HEATING set point (5°C to 34.5°C).
	Cool	Set minimum COOLING set point (5°C to 34.5°C).
Max sp	**Heat**	Set maximum HEATING set point (5.5°C to 37°C).
	Cool	Set maximum COOLING set point (5.5°C to 37°C).
Connect	**Network Join**	Join the thermostat to the gateway.
	Network Unjoin	Unjoin the thermostat from the gateway.
	Network Identify	Identify which gateway is connected.
	Pair Status	Show the paired wiring center Device ID and the paired zone information
	Pair Identify	Select the paired wiring center Device ID to identify
	Pair Add	Pair a zone of a Zigbee wiring center to the thermostat
	Pair Remove	Select a paired zone of a Zigbee wiring center to the thermostat to unpair
Pin code for access to the ADMIN SET menu	**Disable**	Disable the PIN code.
	Enable	Enable the PIN code, and then SET a 4-digit PIN code. In case PIN code is forgotten, power reset the thermostat. Then within 2minutes from power on, use the manufacturer PIN code 0682 to access the ADMIN SET menu to set a new PIN code.
Dev info	**RF Range**	Display the value of RSSI (Received Signal Strength Indicator) between thermostat and gateway. If the wireless connection is lost, a lost link message is displayed.
	Version	Display the software version of this thermostat
	Battery	Show the current battery percentage
Reset	**Admin**	Reset settings in the ADMIN SET menu (Joined network and paired ZigBee device information is maintained).
	Factory	Reset to Factory settings. Whilst undertaking this operation the display will show "WAITING" as it reboots back to default settings. It displays "WAITING" during the process and then reboots with default settings to finish the factory reset process.

Press **Menu/Back button** to return to main screen.

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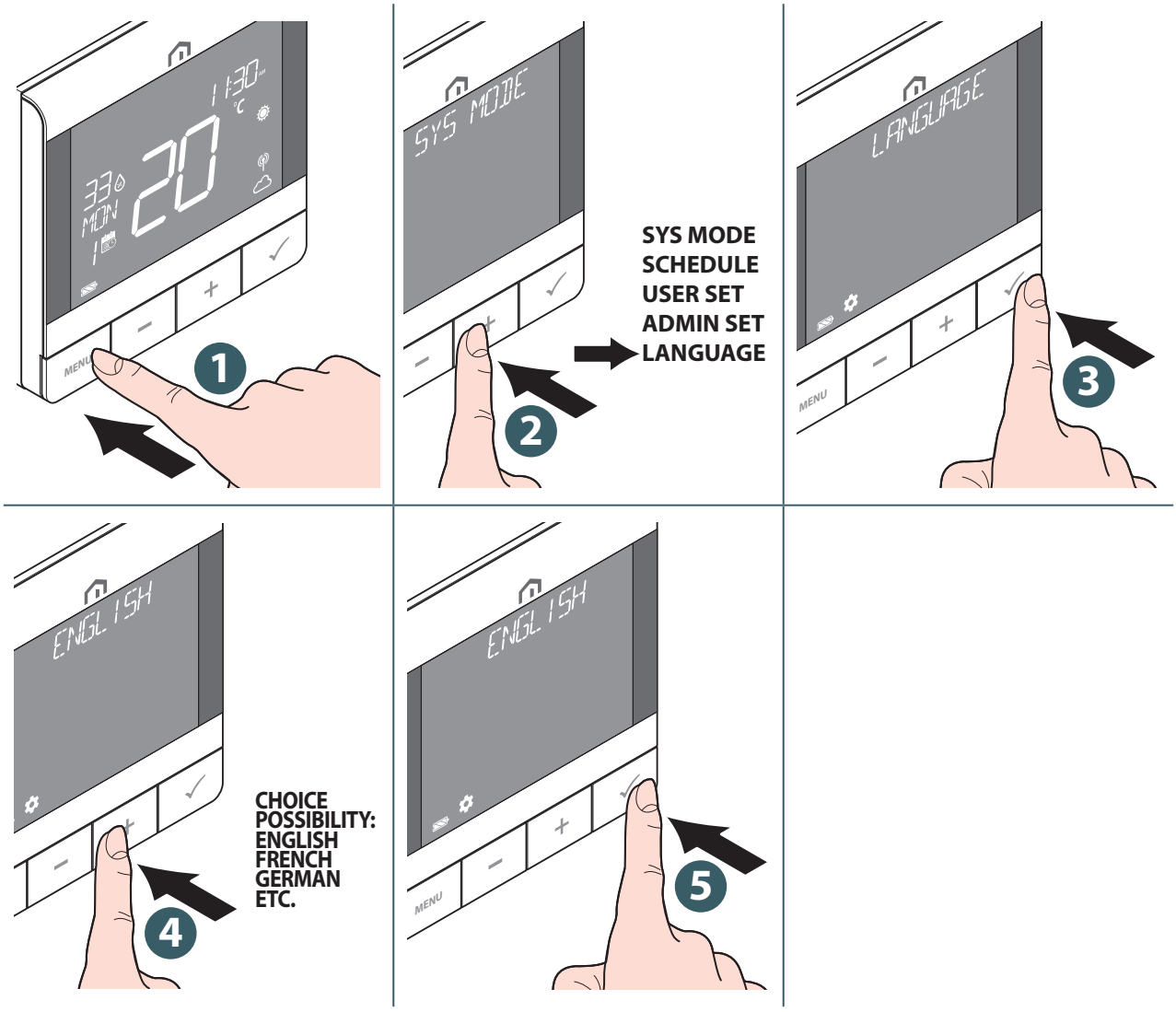
Language setting



Alarm function from wiring center

You can connect a safety thermostat or a dew point sensor to the Alarm terminal of the **Unisenza Plus Wiring Center**. It will turn off the pump, heating/cooling source and all the active zones actuator when there is an alarm.
The **Unisenza Plus UFH Thermostat RF** will display this status when Alarm is functioning, by flashing ☀ or ❄ icon.

Protection

Heat cut off at high temperature

When room temperature exceeds 41 °C, all heating outputs will be **turned Off** regardless of the control pattern.

Temperature sensing error

When there is any sensor error on room temperature measurement, the thermostat will notify all related output devices to **turn Off**.

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Error code display

An error code will be displayed on the text bar when error is detected.
When single error is detected, the error code is displayed directly on the text bar. When multiple error are detected, text bar displays **XX ERRORS** while **XX** is the total number of error detected.
Press **Confirm button** to display the first error code, then press **+** or **-** to view another error code.

Once the error is solved, the error code disappears.

The error code description is as below.

Error Code	Error Description	Troubleshooting
ERROR 001	Lost link with the gateway	Remove device and join again
ERROR 002	Internal temperature sensor error	Check sensor connection
ERROR 003	External temperature sensor error	Check sensor connection
ERROR 004	Floor sensor is broken or shorted.	Check sensor connection
ERROR 005	Floor sensor temperature exceeds the floor high limit temperature for heating	Check temperature limit
ERROR 006	Floor sensor temperature is lower than the floor low limit temperature for heating or the Floor protection limit temperature for cooling	Check temperature limit
ERROR 010	Pairing process with wiring centre fail	Delete pairing and try again
ERROR 10X	Lost link with the Xth paired zone in the wiring center	Delete pairing and try again

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11 MAINTENANCE

Over-the-air (OTA) software update operation.

The **Unisenza Plus UFH Thermostat RF** upgrades its software automatically when there is a newer version software available from the server.

A valid connection to the gateway and the Internet is needed to allow the **Unisenza Plus UFH Thermostat RF** to download the new software image. All device functionality is maintained during the download and the update process. When the thermostat is at low battery, the OTA process can not be initiated.

All settings and paired devices information are retained after the update.

Cleaning

Other maintenance

Any type of maintenance must only be carried out by qualified personnel, trained and authorized by the Manufacturer. It is absolutely forbidden to open the device and try to repair it independently, this would result in a serious danger for the person as well as voiding any warranty.

The manufacturer accepts no responsibility for any damage to property or people.

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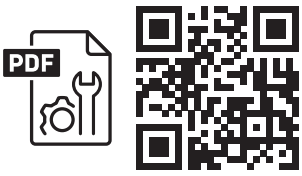
12 MANUAL DOWNLOAD AND UPDATES

Due to the requirement for continuous improvement, we constantly update the user manuals of our systems.
We therefore invite you to periodically check whether the manual in your possession is always the latest written version.
To do this, you can connect to the following **internet address**:

https://www.purmogroup.com/support

or by scan the **QR cod**e displayed below.



13 DISPOSAL AT THE END OF LIFE

Pursuant to art. 13 of Decree-Law No. 49 of 2014 "Implementation of the WEEE Directive 2012/19/EU on waste electrical and electronic equipment".
The mark of the crossed-out bin with a bar specifies that the product was placed on the market after 13 August 2005 and that at the end of its useful life it must not be collected with other waste but must be disposed of separately. All the appliances are made of recyclable metal materials (stainless steel, iron, aluminium, galvanized sheet metal, copper, etc.) in a percentage greater than 90% by weight. Make the equipment unusable for disposal by removing the power cable and any compartment or cavity closing device (if any). It is necessary to pay attention to the management of this product at the end of its life by reducing any negative impacts on the environment and improving the efficiency of the use of resources, applying the principles of "polluter pays", prevention, preparation for reuse, recycling and recovery. Please note that the illegal or incorrect disposal of the product entails the application of the penalties provided for by current legislation.

Information on disposal in Italy
In Italy **WEEE** equipment must be delivered to:
collection centres (also called waste separation areas or platforms)
the Dealer where you buy new equipment, who is required to accept it free of charge ("one on one" collection).

Information on disposal in European Union countries
The EU **WEEE** equipment directive has been adopted differently by each country, therefore if you want to dispose of this equipment we suggest you contact the local authorities or the dealer to ask for the correct method of disposal.

23006M1810C01EEN1 UNISENZA PLUS - UFH Thermostat RF manual EN

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