Installation
and user manual

Heating and Cooling

Smart, app connectivity

Geo location

5 year guarantee

Unisenza PLUS - UFH Thermostat 230V/24V

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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

UFH Thermostat 230V/24V are **AC-powered Room Thermostats** ideally for hydronic radiant heating/cooling systems. It has a built-in relay for a wired connection to the underfloor heating wiring centre for the control of thermal actuators in **NC** or **NO** type. It communicates with an **Unisenza Plus Gateway** protocol to allow remote access from a mobile **APP**. It also has a multi-functional input for connecting additional accessories to further enhance the thermostat applications.

Its features are:
- Large negative LCD display with backlight
- Support Heating and Heating/Cooling control

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- Built-in humidity sensor
- Operation modes include Schedule, Manual, Temporary override, Holiday 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
- Built-in relay
- 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

UFH Thermostat 230V/24V

Temperature Scale	°C or °F
Temperature Display Range	5 °C - 45 °C
Temperature Display Resolution	0.1 °C o 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
Relay switching rating	3A resistive, 1A inductive
Power Supply	230Vac +/-10% 50Hz 24Vac +/- 20% 50Hz
Operating Environment	Indoor, residential & commercial
Operating Temperature	0°C – 50 °C
Storage Temperature	-20 °C – 60°C
Operating/Storage Humidity	5-95% RH, non-condensing
Dimensions	86(W) x 86(D) x 27(H) mm
Ingress Protection Rating	IP30
Regulation	CE, UKCA
Environmental Requirement	RoHS compliance

The **UFH Thermostat 230V/24V** complies with the following European directives:
- RED directive 2014/53/EU
- ROHS directive 2011/65/EU
- REACH (EC 1907/2006)

The **UFH Thermostat 230V/24V** complies with the relevant UK Statutory Instruments:
- Electrical Equipment (Safety) Regulations 2016
- Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (SI 2012/3032)
- REACH ETC. (Amendment etc.) Regulations 2020 - SVHC

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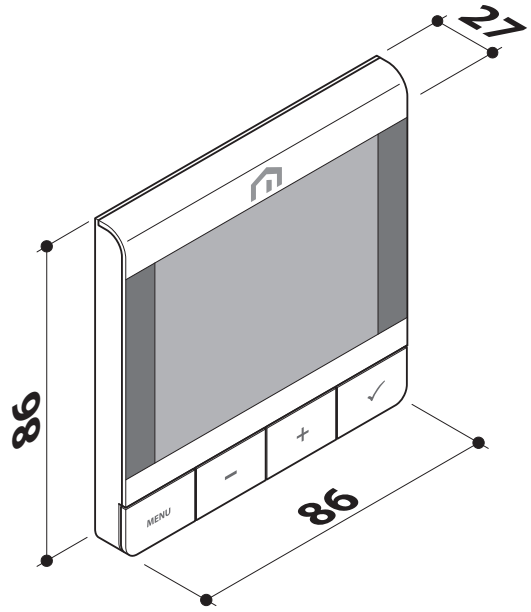
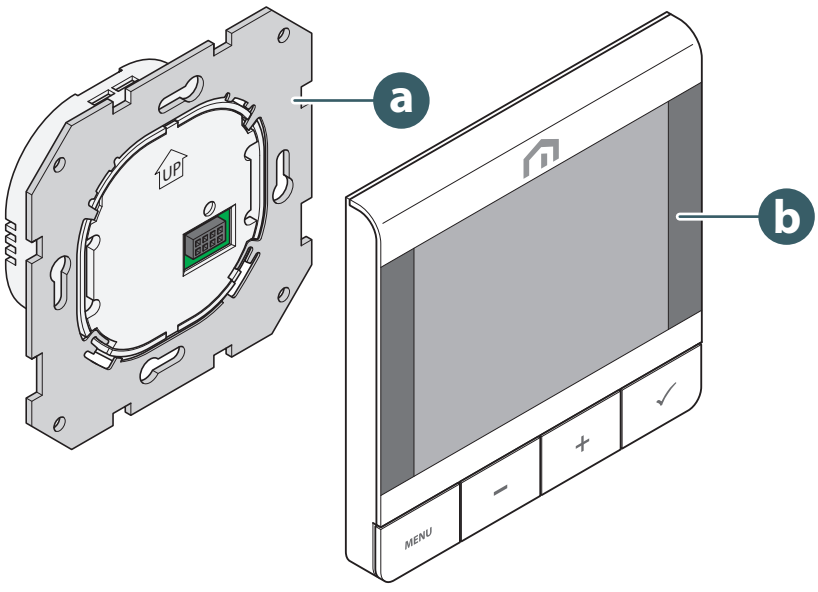
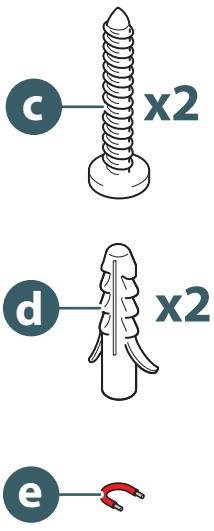
3 DIMENSIONS



4 PACK CONTENTS





a. Wall mount bracket
b. UFH Thermostat 230V/24V
c. Plate fixing screw
d. Fixing wall plug for plate fixing
e. Bridge

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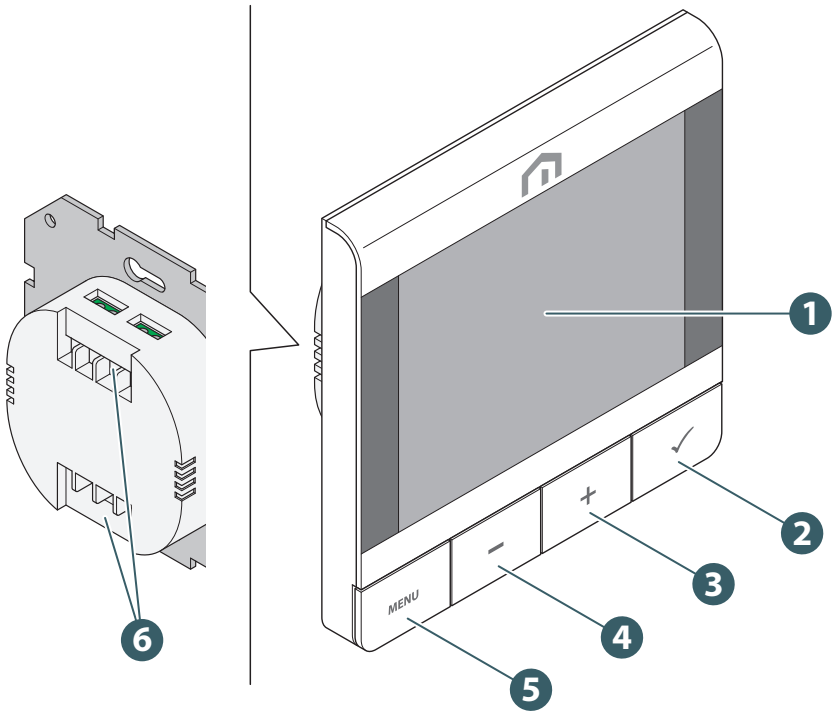
5 OVERVIEW

UFH Thermostat 230V/24V



1. LCD display
2. Confirm button
3. Button +
4. Button -
5. Menu / Back button
6. Electric connections

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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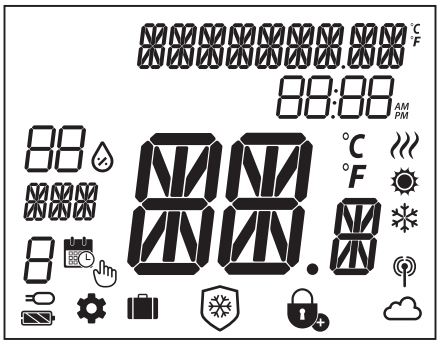
Display icons



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 (Not Used)

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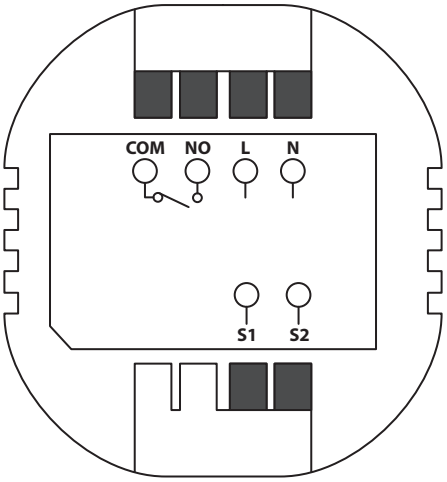
Terminals Description



Terminal	Function	Requirement
L	Live Input	230Vac +/-10% 50Hz , 24Vac +/-20% 50Hz Wire size 0.75 mm^2 to 2.5 mm^2
N	Neutral Input	230Vac +/-10% 50Hz , 24Vac +/-20% 50Hz Wire size 0.75 mm^2 to 2.5 mm^2
COM	Common Terminal	3(1)A, Free Contact, Wire size 0.75 mm^2 to 2.5 mm^2
NO	Normal Open Terminal	3(1)A, Free Contact, Wire size 0.75 mm^2 to 2.5 mm^2
S1 / S2	- Floor Temperature Sensor - External Temperature Sensor - Occupancy Sensor	Wire size 0.75 mm^2 to 1.0 mm^2

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

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6 DOWNLOAD THE APP FOR THERMOSTAT MEASUREMENT

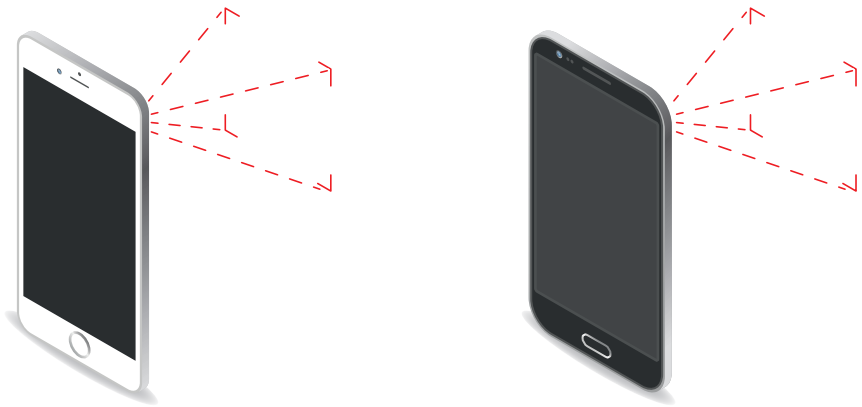
The management of the **UFH Thermostat 230V/24V** is also possible through a dedicated APP that allows its configuration and the management of the devices you will pair.

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

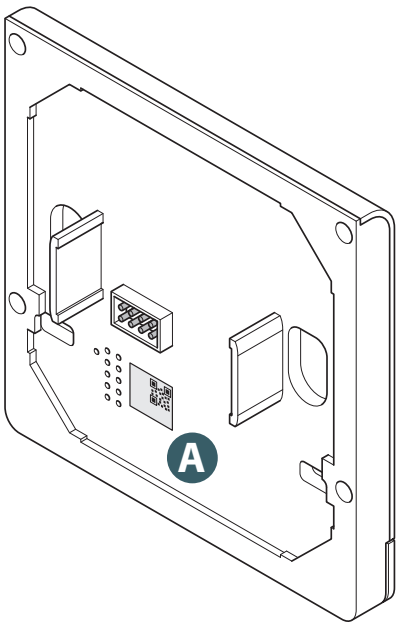
Or, again using the device, you can directly access the installation page using the following **QR codes**, again depending on the operating system.

Download on the App Store

GET IT ON Google Play



7 NAMEPLATE



At the rear of the **UFH Thermostat 230V/24V** there is a sticker **(A)** which indicates the device data.

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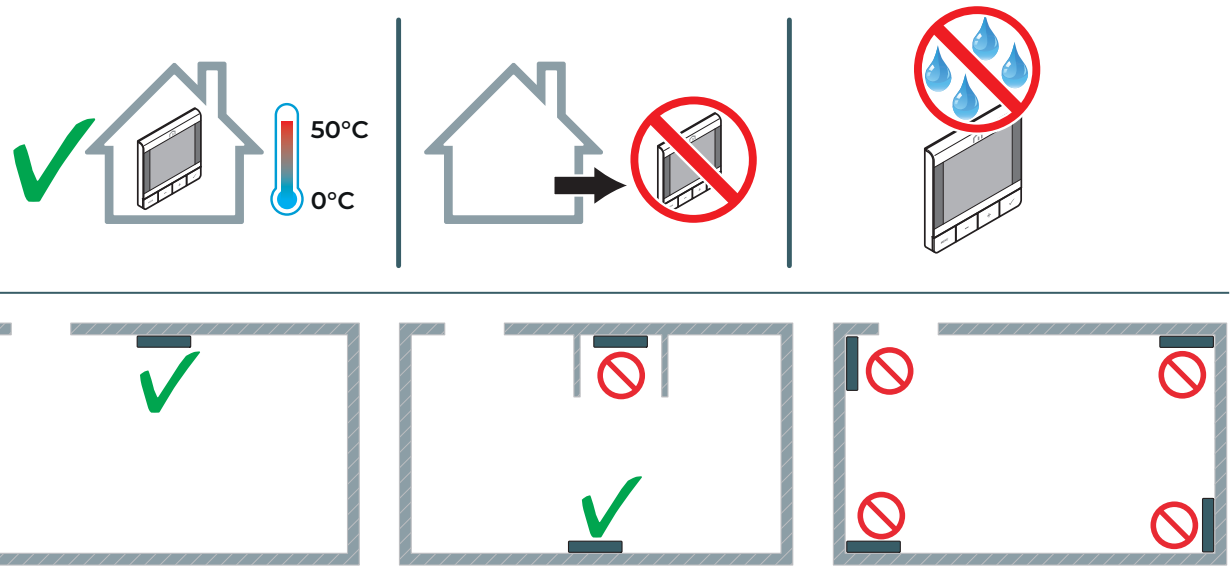
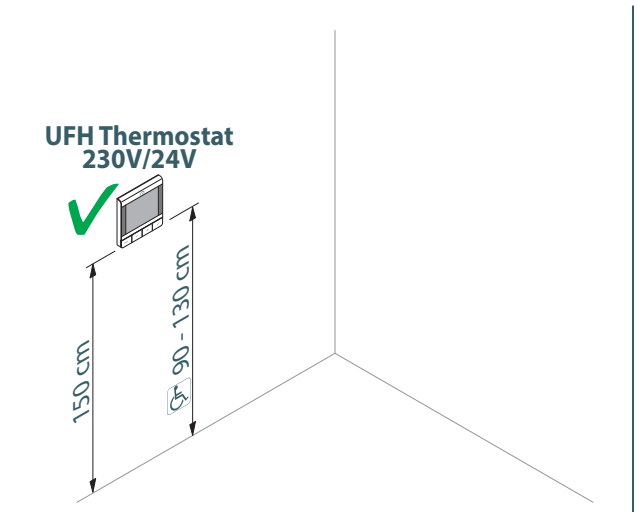
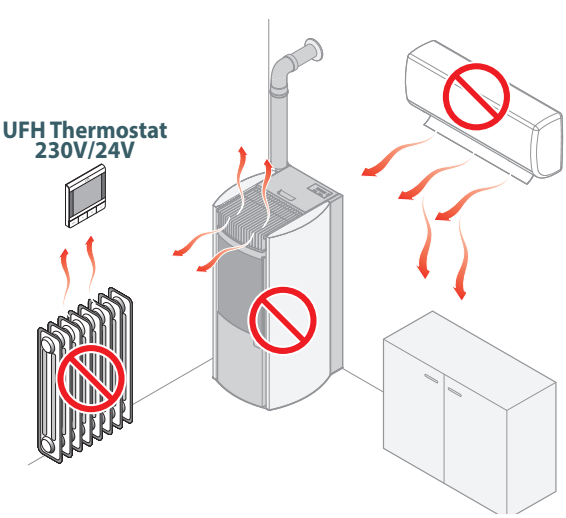
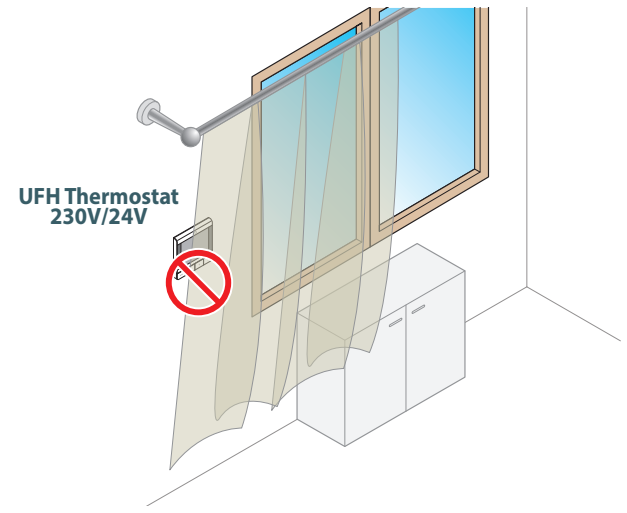
8 INSTALLATION

Recommendations for a correct installation









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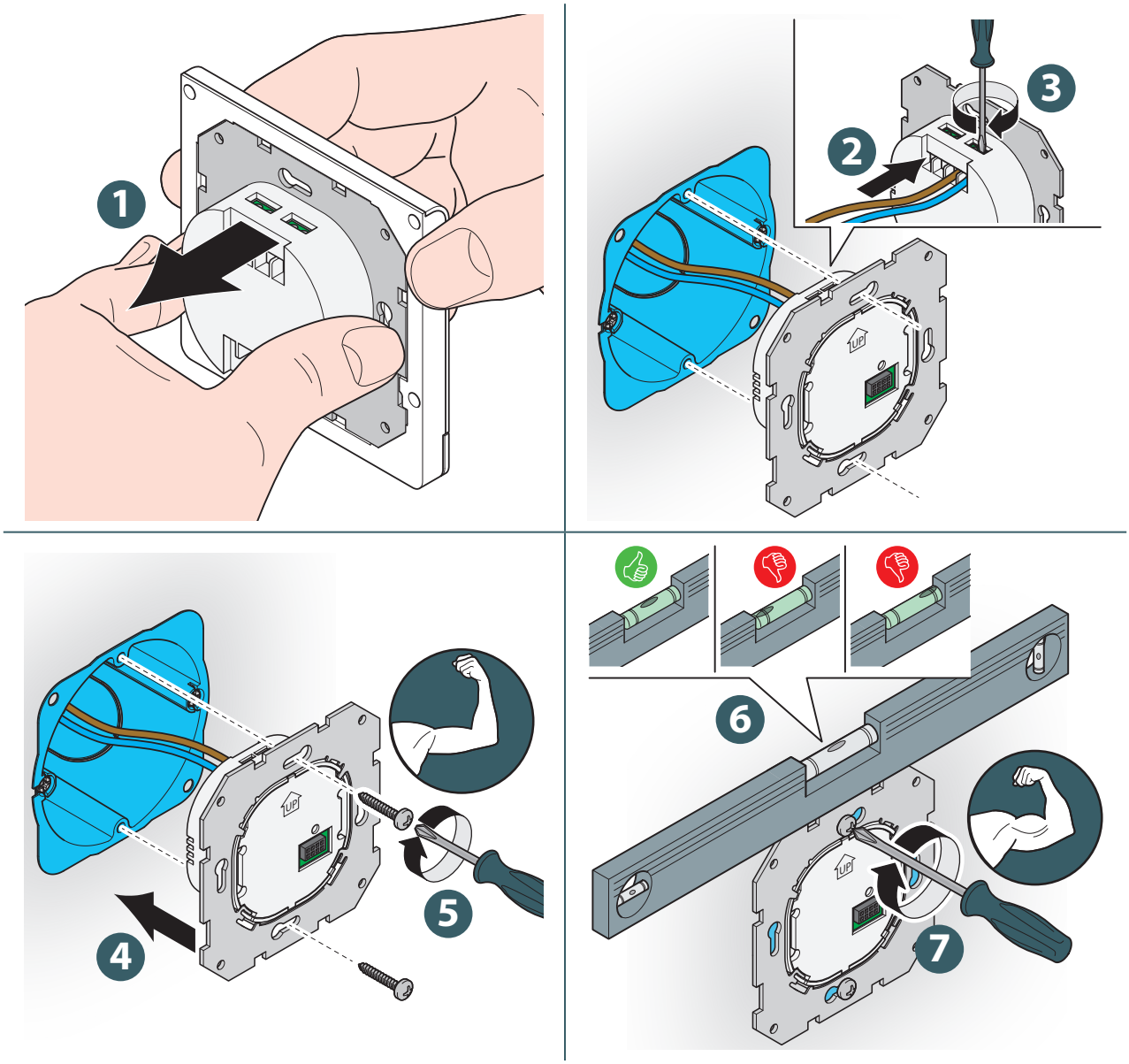
Fixing the bracket to the wall



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

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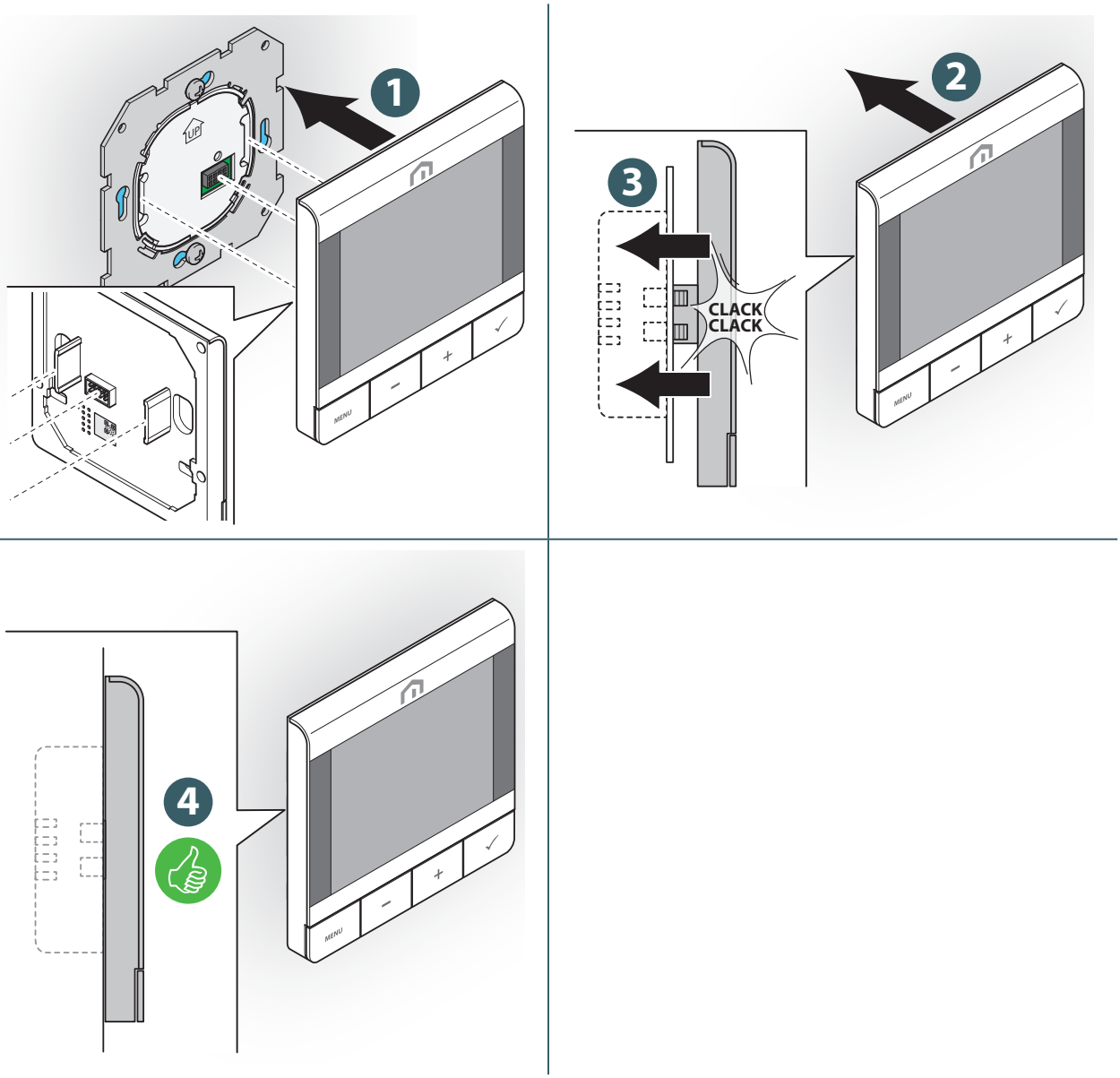
Fixing the thermostat to the bracket



9 USE

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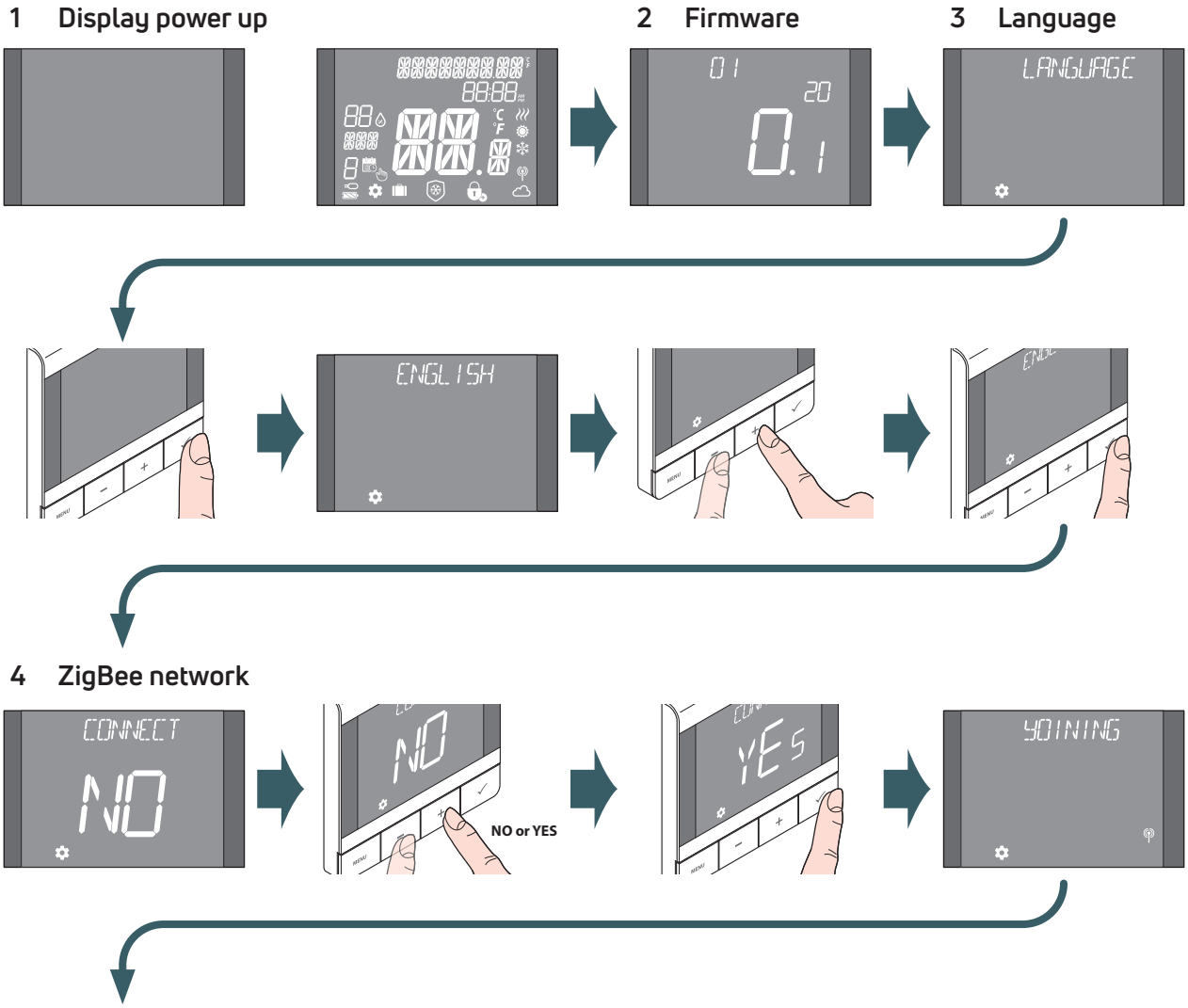
Main screen operation

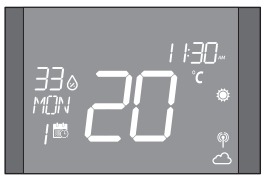
The LCD backlight is Off during stand by in normal operation. Press any key to turn on the LCD backlight before performing other user operations as descried below. The LCD backlight will be turned off automatically when no key press for 15 seconds.

Power up

The ignition of the **UFH Thermostat 230V/24V** 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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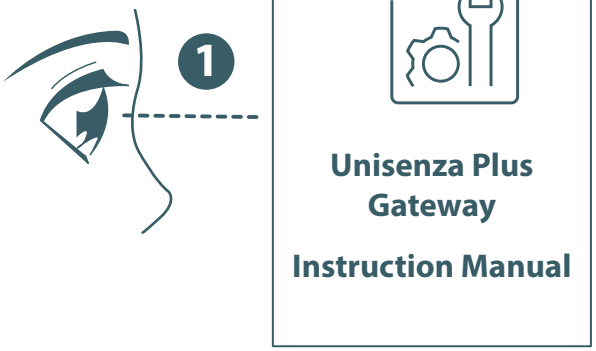
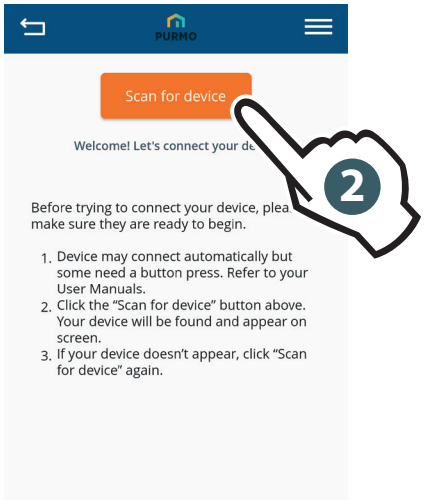
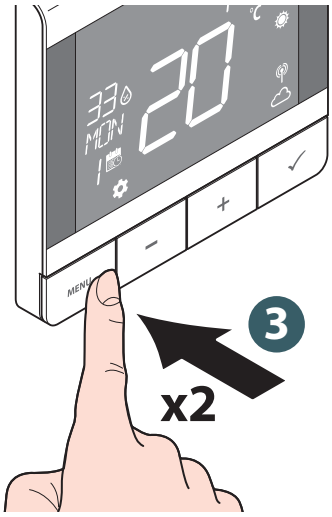
Joining to Unisenza Plus Gateway

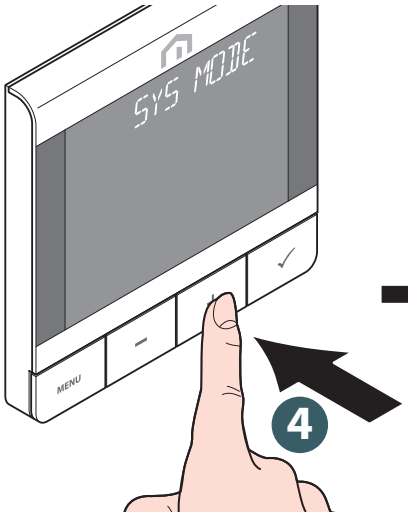
With APP

The association between the **UFH Thermostat 230V/24V** 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**.

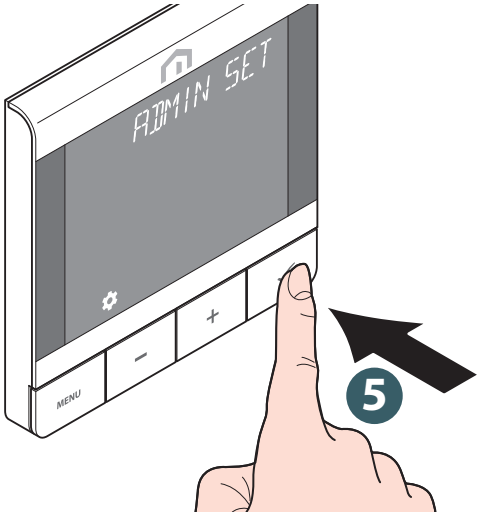


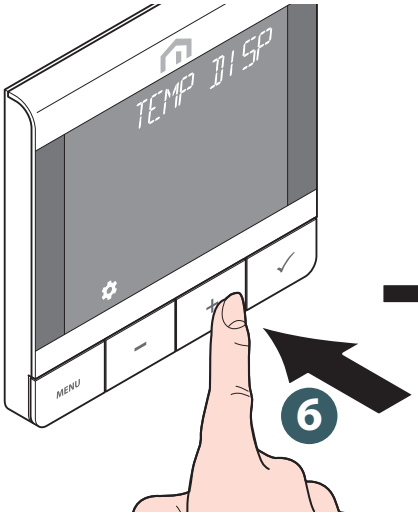






SYS MODE
SCHEDULE
USER SET
ADMIN SET
LANGUAGE





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

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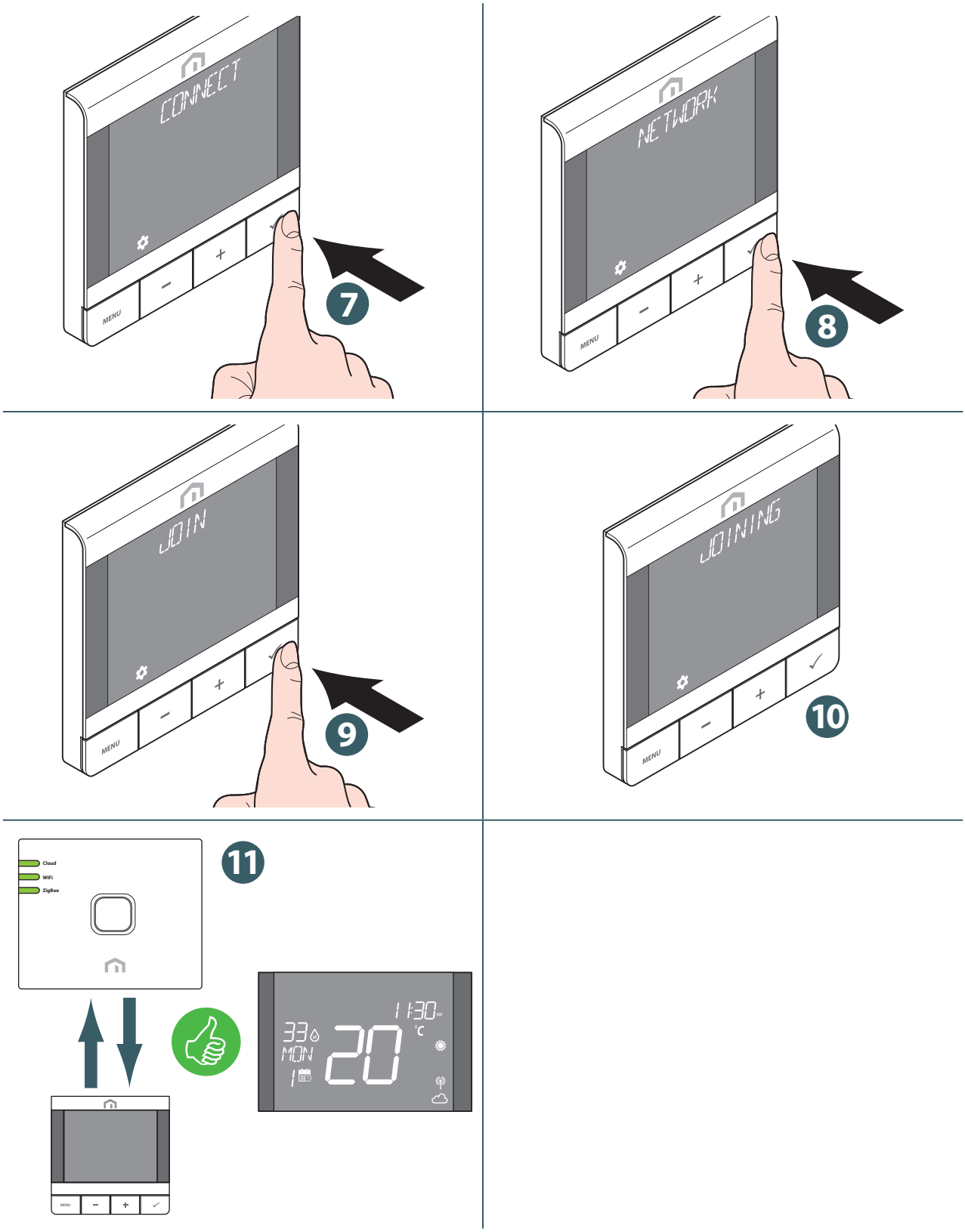

If you want to associate a **UFH Thermostat 230V/24V** that was previously associated with another Gateway, it is necessary to perform a reset to the factory settings of the electronic regulator before making the new association.

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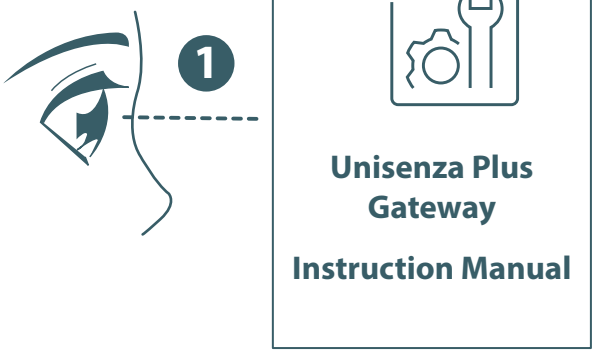
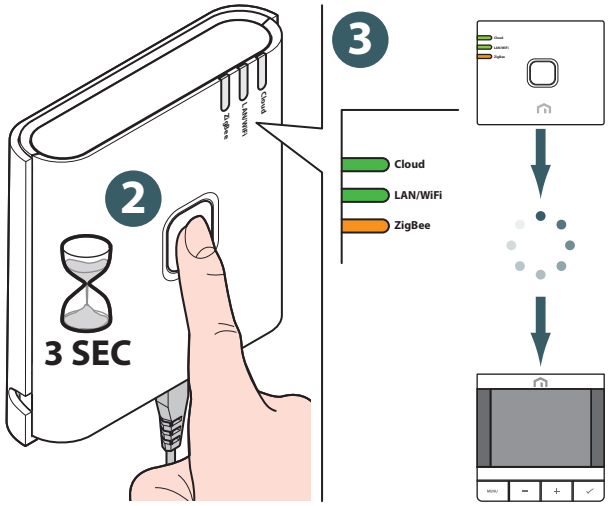
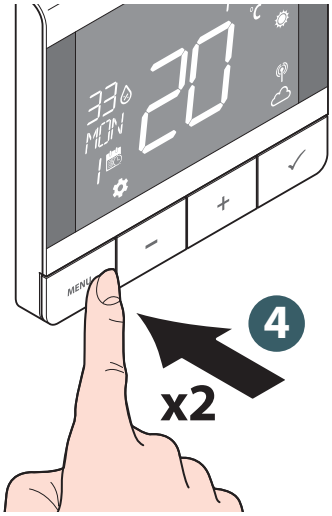
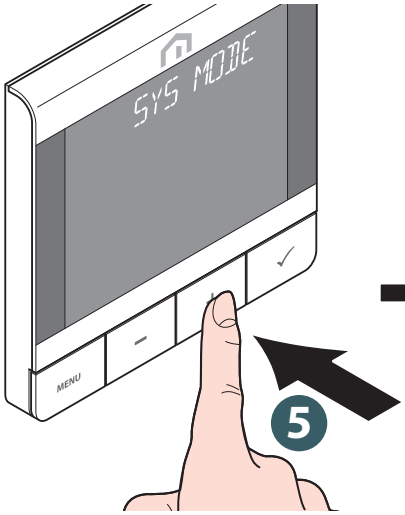
Without APP

The association between the **UFH Thermostat 230V/24V** 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**.

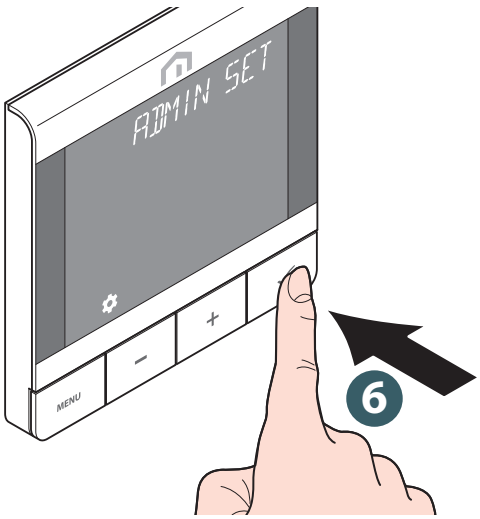


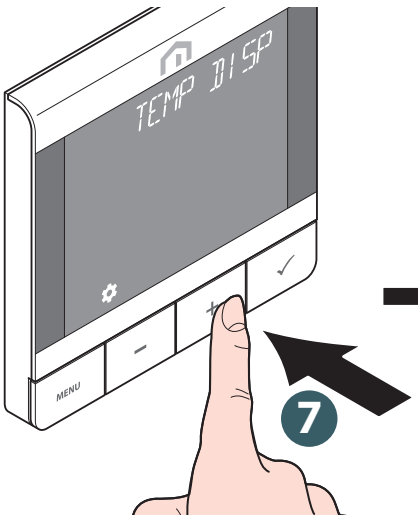






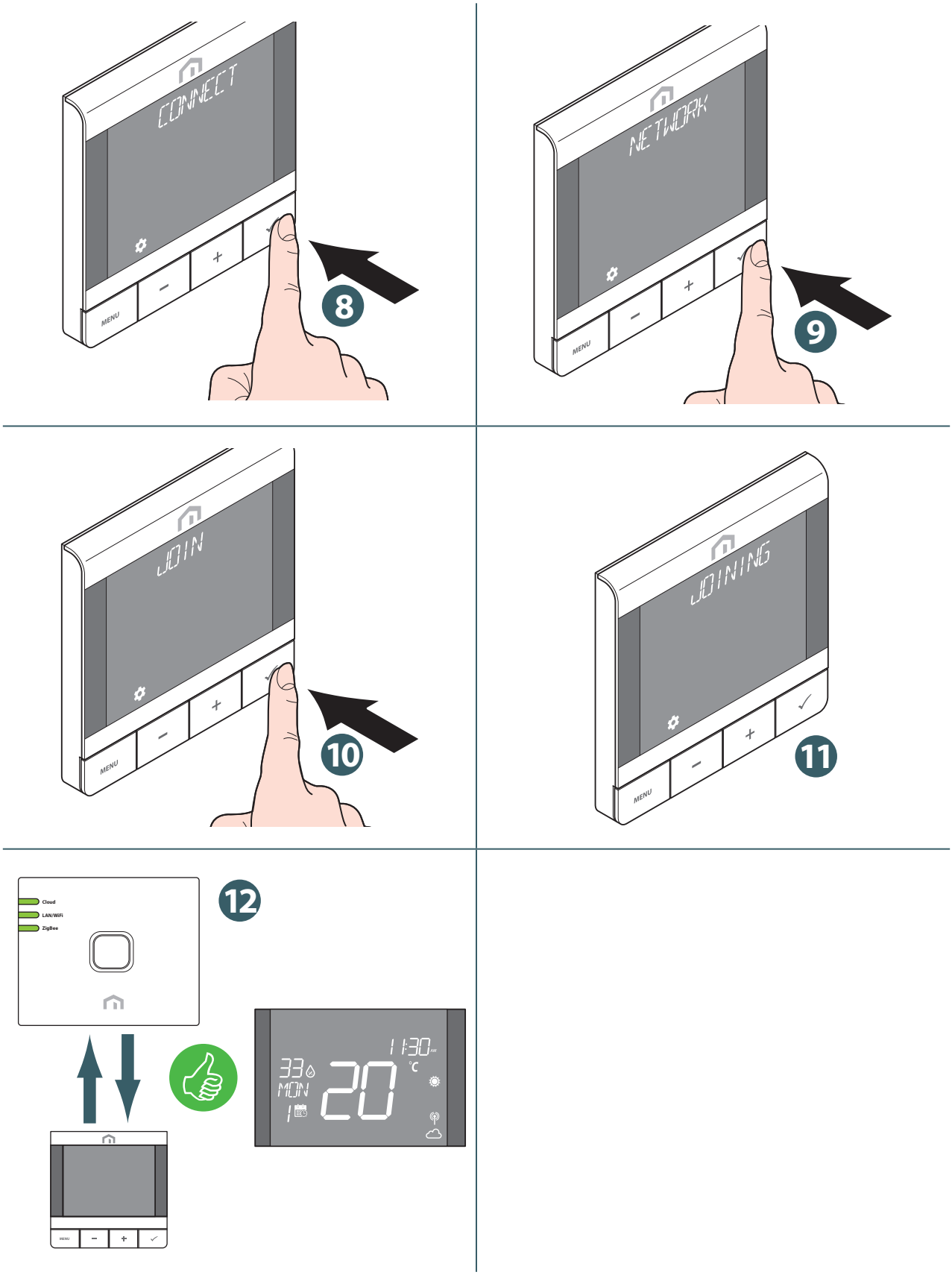
SYS MODE
SCHEDULE
USER SET
ADMIN SET
LANGUAGE





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

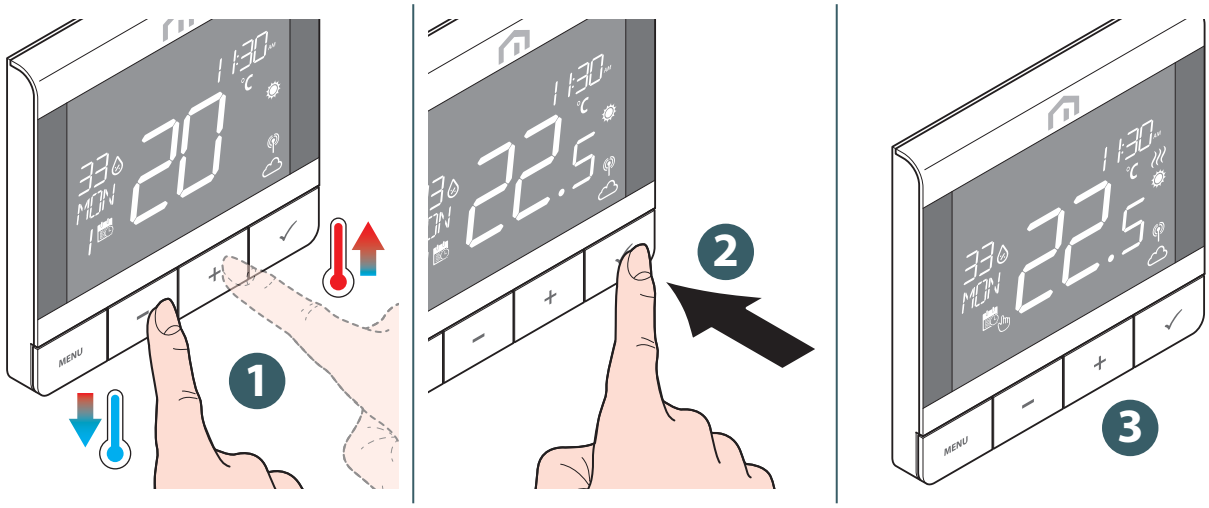
EN



If you want to associate a **UFH Thermostat 230V/24V** 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.

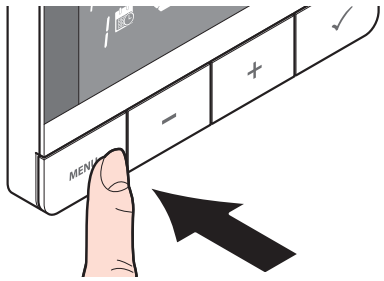
EN

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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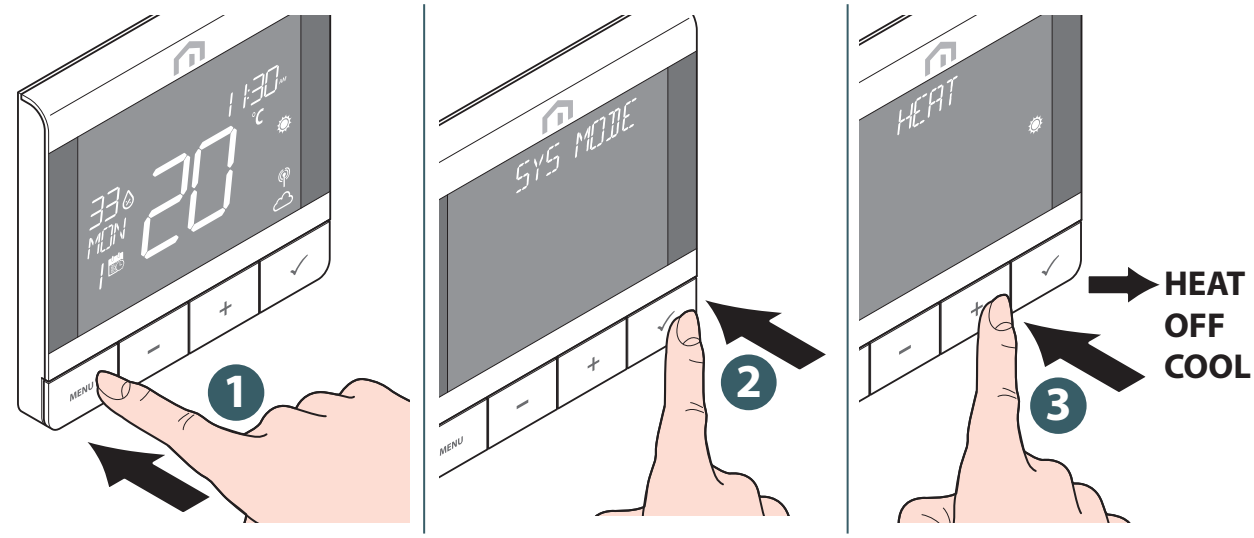
Change system mode



Cool mode is available only when **SYS TYPE** is **HEAT+COOL**.
Press **Menu/Back button** to return to main screen.

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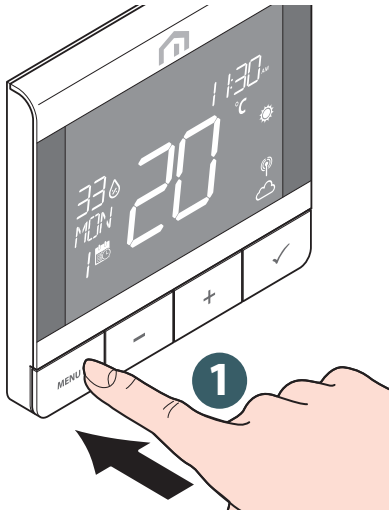
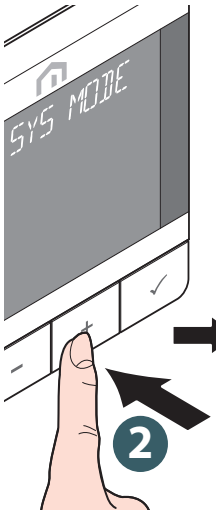
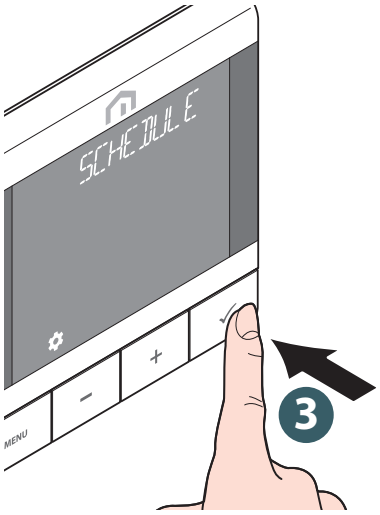
Schedule setting

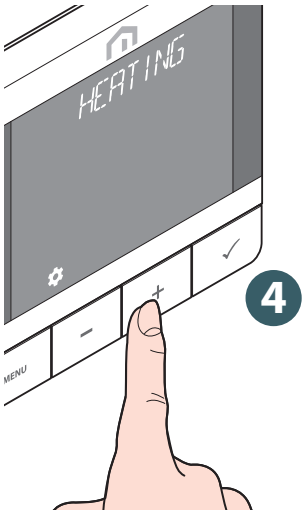
Schedule for different mode **(HEATING, COOLING)** can be defined separately here. Three schedule program are available **(7 DAY / SINGLE / 5+2 DAY)**.



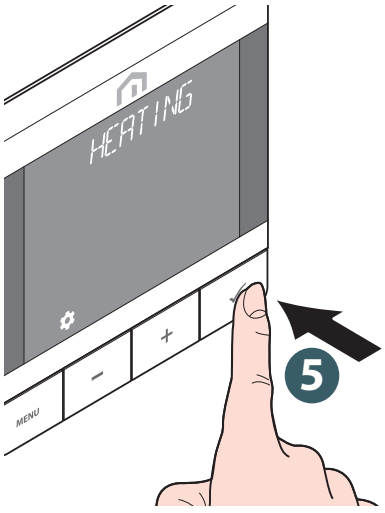


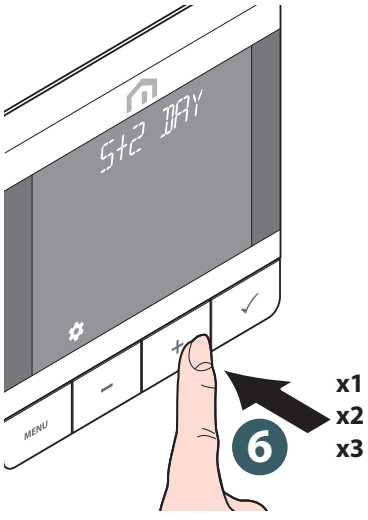
SYS MODE
SCHEDULE
USER SET
ADMIN SET
LANGUAGE





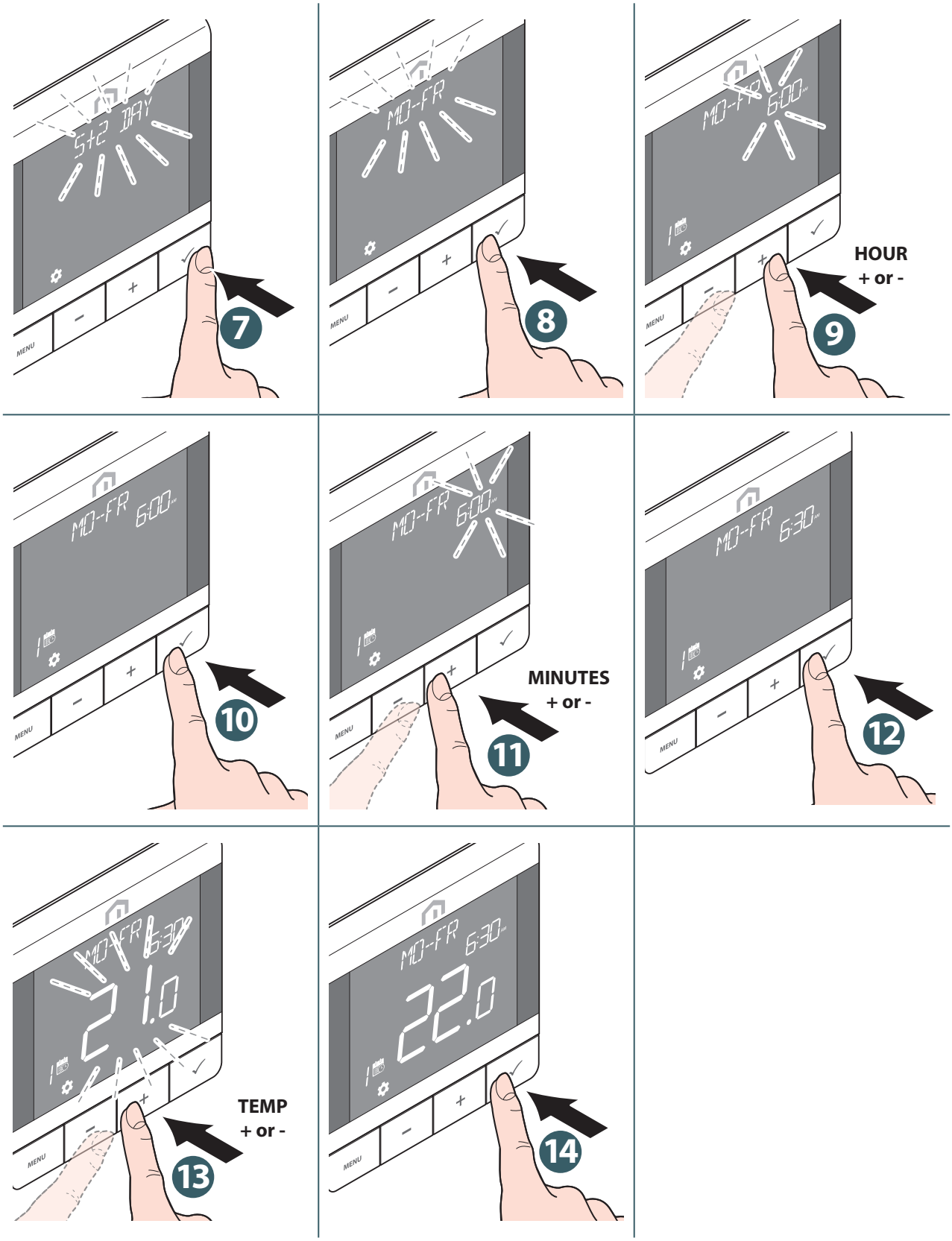
HEATING	When SYS MODE is HEAT, temperature set point is set for each time slot
COOLING	When SYS MODE is COOL, temperature set point is set for each time slot





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



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

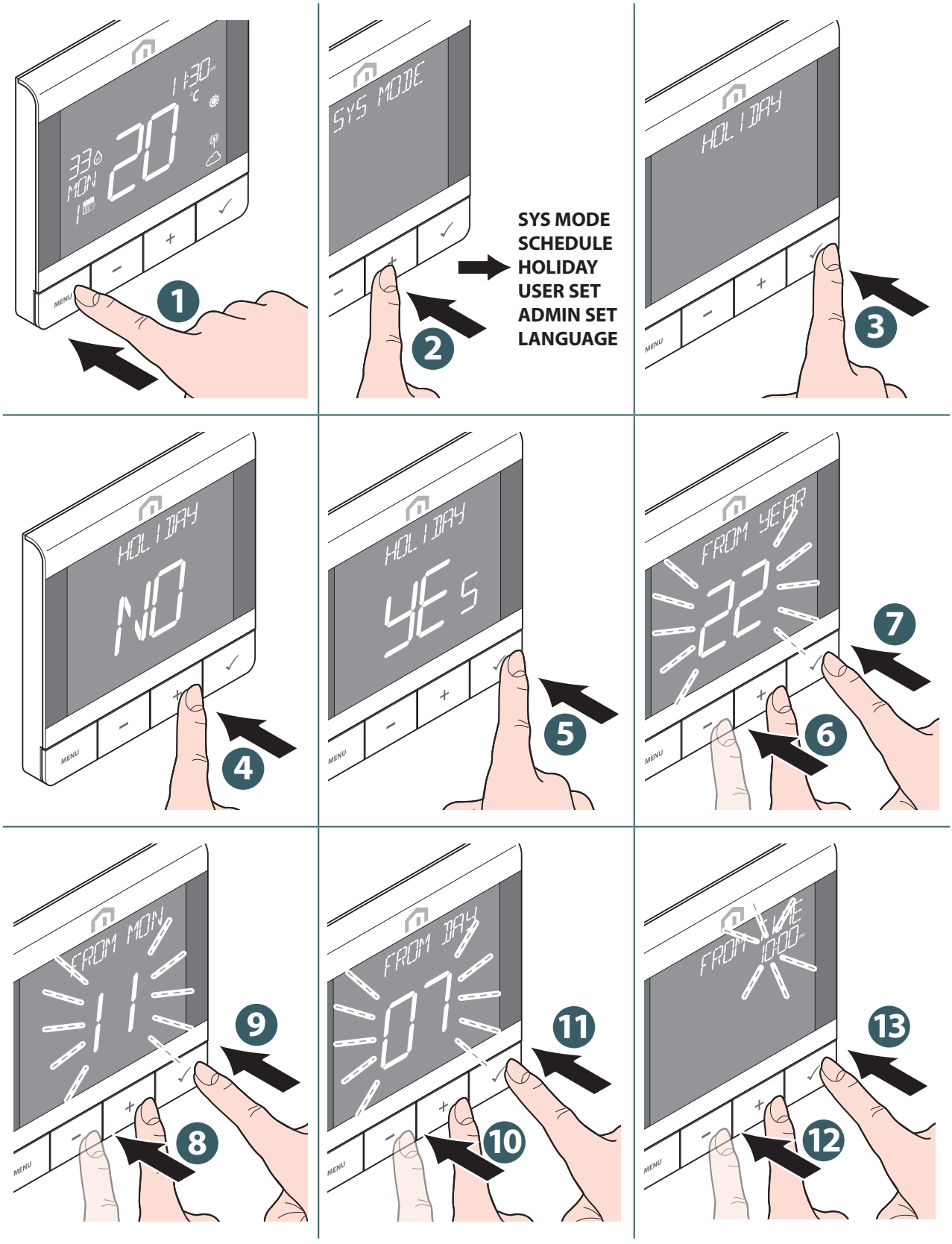
Press **Menu/Back button** to return to main screen.

EN

Holiday setting

If the thermostat is not joined to the **Unisenza Plus Gateway**, a local Holiday function is provided in which the holiday start/end schedule and set point can be set on the device.

To enable the holiday schedule:



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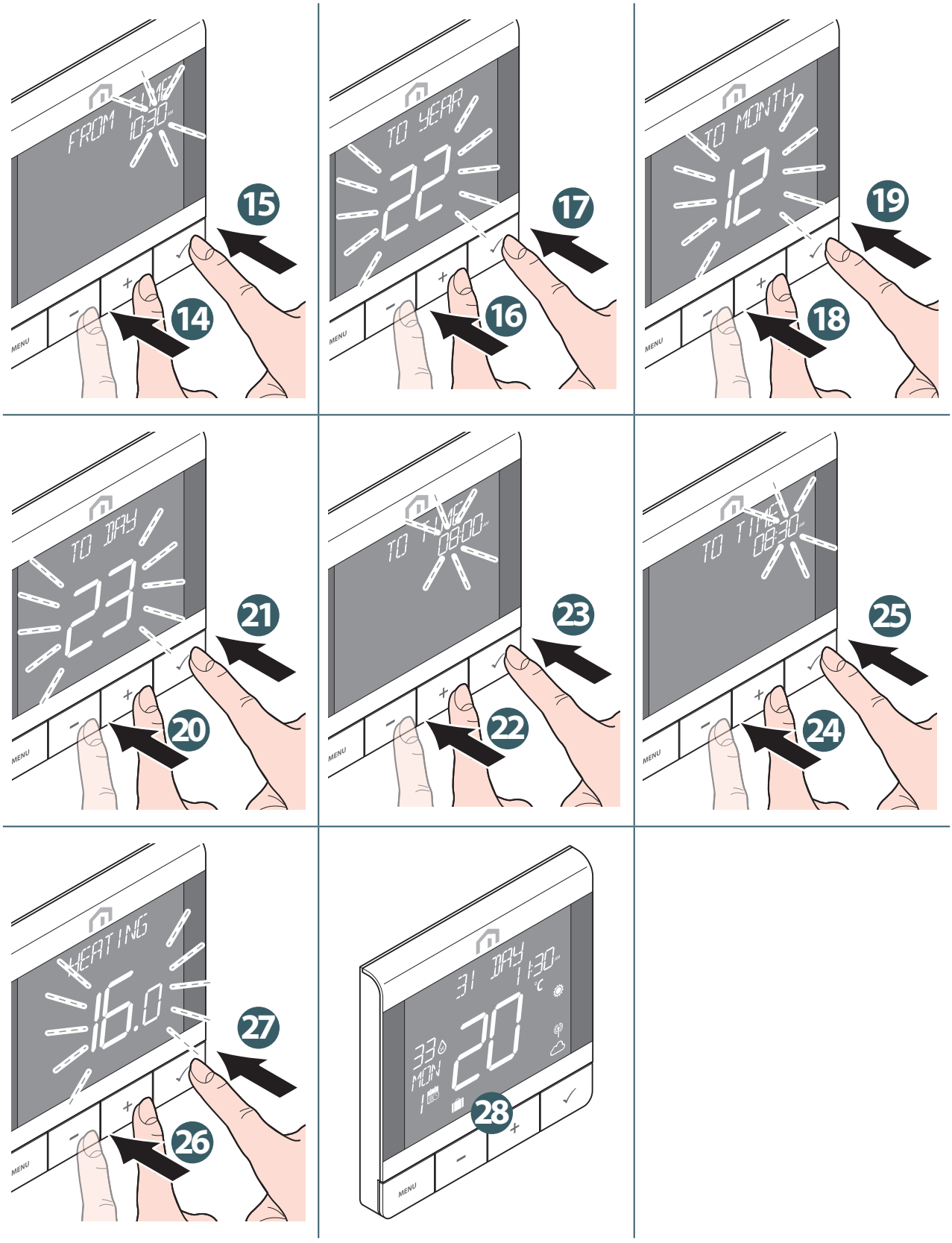
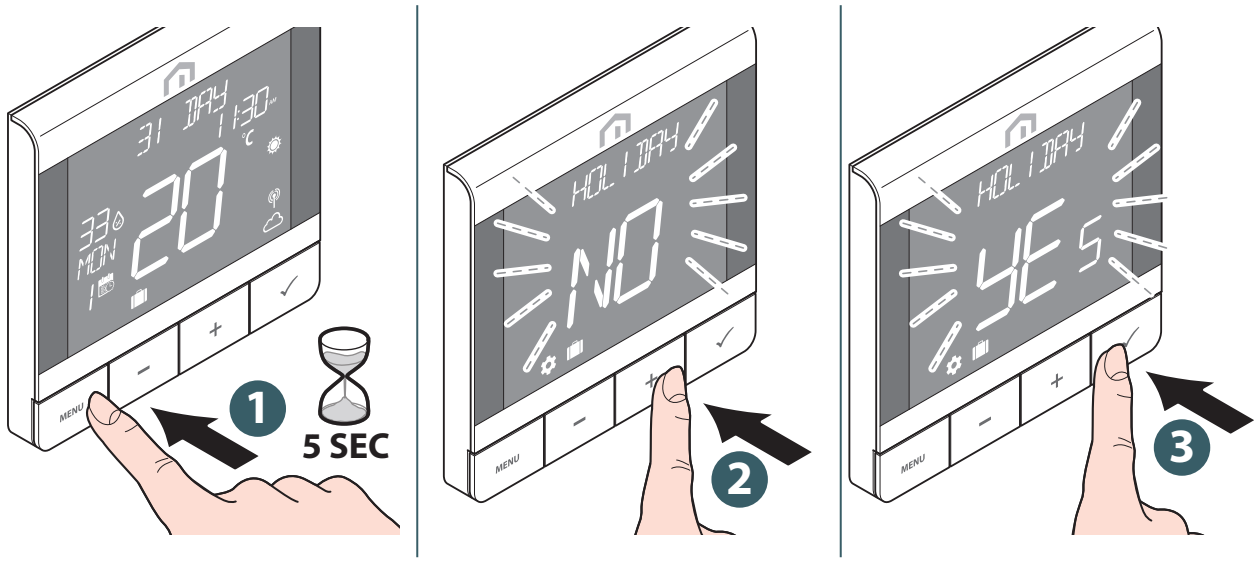


If current **Mode** is **HEAT**, this setting is for **Heating** set point, if current **Mode** is **COOL**, this setting is for **Cooling** set point.

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

EN

To disable the holiday schedule:



During holiday mode, 🧳 and the remaining days of the holiday are displayed. The thermostat controls using the holiday set point and the set point cannot be changed.

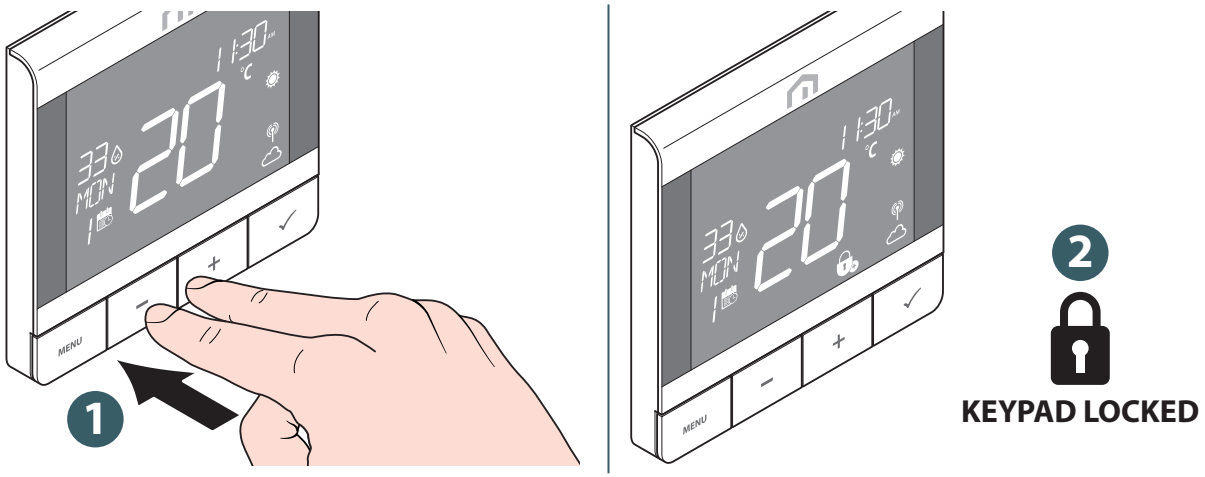
The holiday mode will be stopped by holiday end schedule or by manual. To manually stop the holiday mode, press and hold **MENU** button and **STOP HOLIDAY** is displayed. Choose **Yes** to confirm ending holiday mode.

After the holiday mode, the device returns to permanent hold mode if it was in permanent hold mode before entering holiday mode, otherwise it returns to schedule.

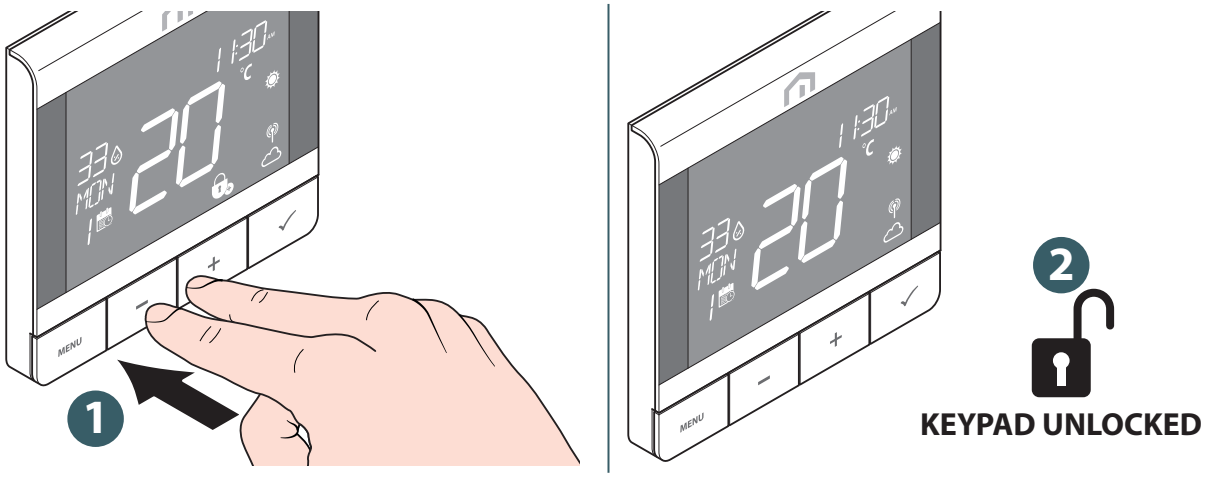
EN

Key lock

Lock the keypad



Unock the keypad



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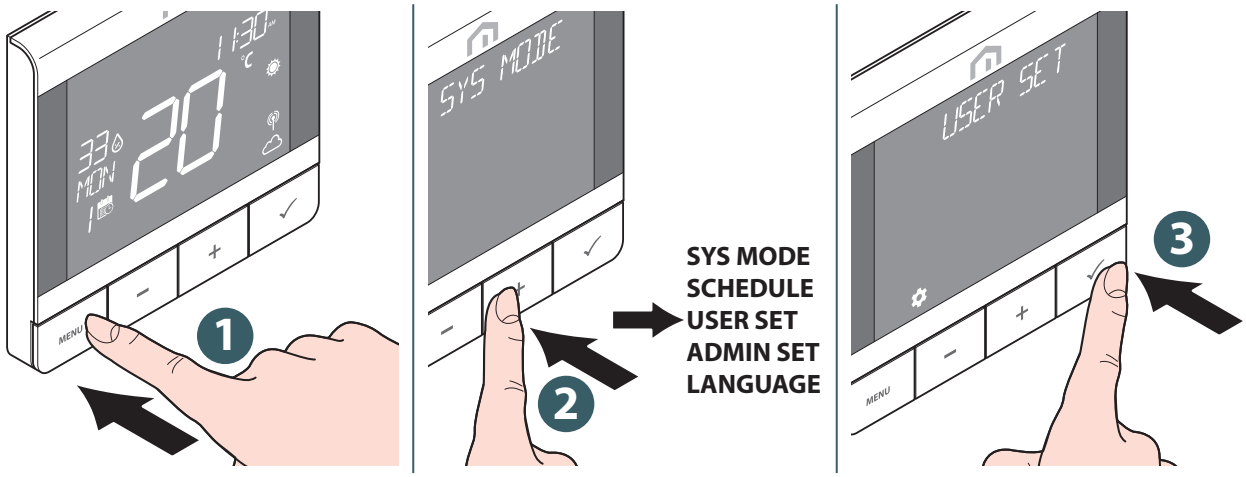
User setting



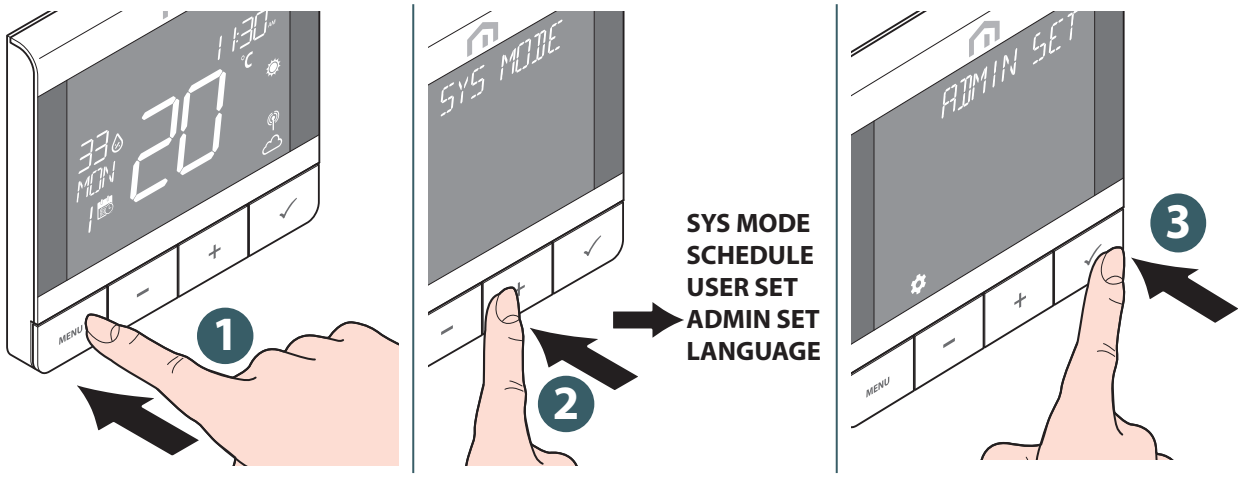
The editable settings are:

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)
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
Flr temp		(available when "S1/S2" is enabled for "FLOOR" Floor Sensor). Select to display floor temperature on the text bar.
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.

EN

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 HEAT/COOL
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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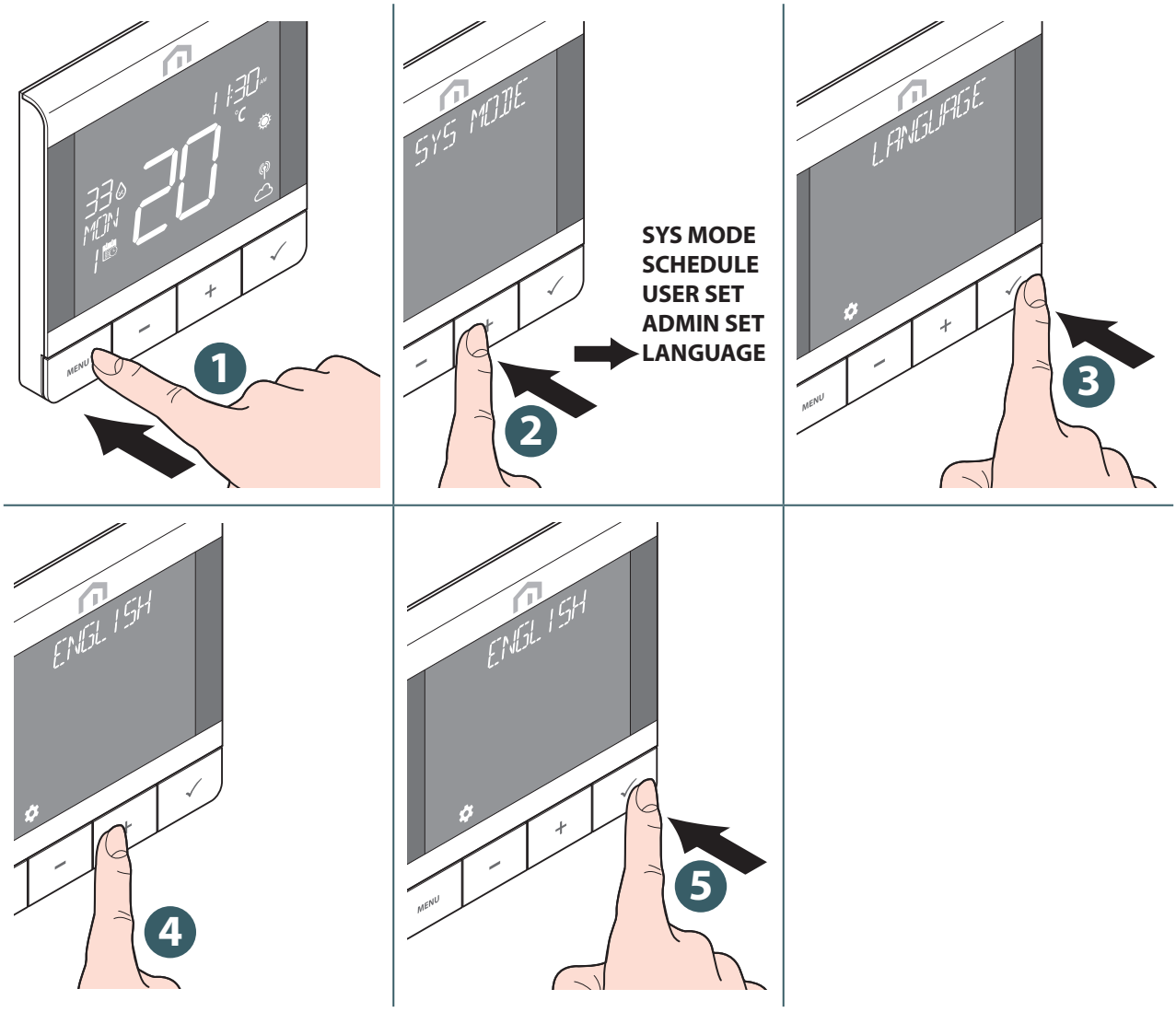
Rly type		Select NO or NC type relay's work mode
Control Select which control algorithm mode is used for room temperature control	**Tpi ufh**	(available when SYS MODE is "HEAT"): algorithm designed for underfloor heating (for heating systems with high inertia).
	Tpi rad	(available when SYS MODE is "HEAT"): 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.
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
Reset	**Admin**	Reset settings in the ADMIN SET menu (Joined network and paired ZigBee device information is maintained).
	Factory	Reset everything back to the status same as the thermostat firstly unboxed. 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.

EN

Language setting



Protection

Heat cut off at high temperature
When room temperature detected 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**.

Holiday setting

The holiday function allows the system managed by the **UFH Thermostat 230V/24V** to be suspended. Te enable this function, act directly from the system management application.

EN

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 accordingly.

The error code description is as below.

Error Code	Error Description
ERROR 001	Lost link with the Unisenza Plus Gateway
ERROR 002	Internal temperature sensor error
ERROR 003	External temperature sensor error
ERROR 004	Floor sensor is broken or shorted.
ERROR 005	Floor sensor temperature exceeds the floor high limit temperature for heating
ERROR 006	Floor sensor temperature is lower than the floor low limit temperature for heating or the Floor protection limit temperature for cooling

10 MAINTENANCE

EN

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

The **UFH Thermostat 230V/24V** 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 **UFH Thermostat 230V/24V** to download the new software image. All device functionality is maintained during the download and the update process, until the device restarts to activate the new software. When the thermostat is at low battery, the OTA process does not start.

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

Backup Power

During power outage, the thermostat internal capacitor helps provide power to maintain the clock for a short period of time. Please check clock settings when power is resumed.

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.

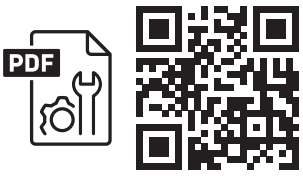
EN

11 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.



12 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.

22002M1810C01EN00 UNISENZA PLUS - UFH Thermostat 230V/24V manual EN

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