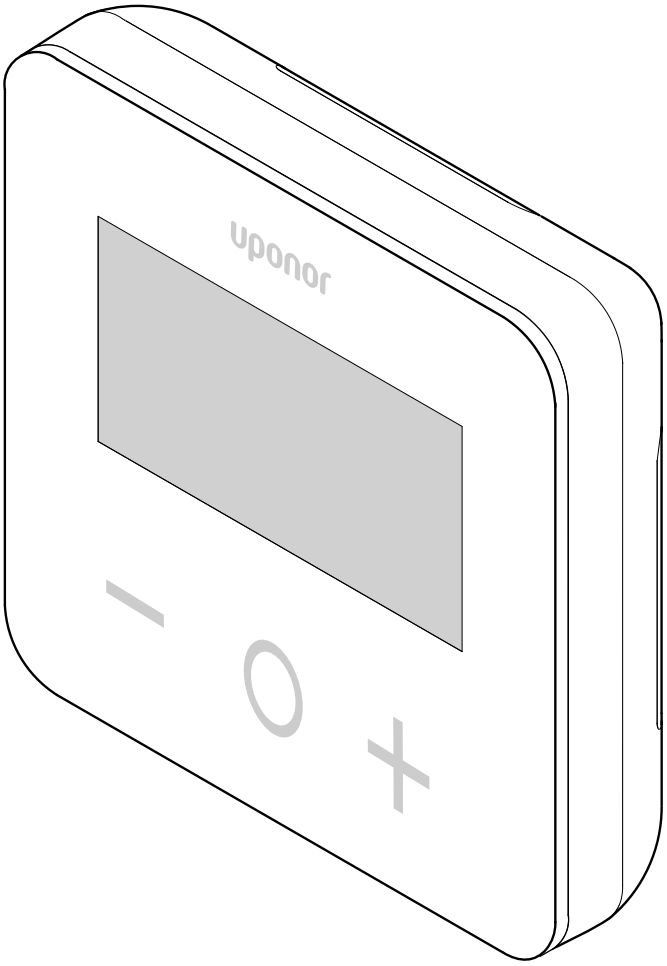
Uponor Base thermostat display T-27 230V

EN Installation and operation manual



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1 Safety instructions and disclaimer

1.1 Safety instructions

Safety messages used in this document

STOP	**Warning!** Risk of injury and damage. Ignoring warnings can cause personal injury and/or damage to products and other property.
⚠	**Caution!** Risk of malfunctions. Ignoring cautions can cause the product to not operate as intended.
!	**Note** Important information to the section in the manual.

Uponor uses safety messages in the document to indicate special precautions required for the installation and operation of any Uponor product.

Safety measures

!	**Note** For safe and proper use, obey the instructions given in this document. Keep them for future reference.

The installer and operator agree to comply with following measures regarding Uponor products:

- Read and obey the instructions and processes in the document.
- The installation must be performed by a qualified installer in accordance with local regulations.
- Uponor is not liable for modifications not specified in this document.
- Switch off all connected power supplies before starting any wiring work.
- Do not expose the Uponor components to flammable vapours or gases.
- Do not use water to clean electrical Uponor products/ components.

Uponor is not liable for damage caused by ignoring the instructions in this document or the applicable building code.

Power

STOP	**Warning!** Uponor system power supply: 230 V AC, 50 Hz. In case of emergency, immediately disconnect the power.

Technical constraints

⚠	**Caution!** To avoid interference, keep data cables away from components bearing power of more than 50 V.

1.2 Correct disposal of this product (Waste Electrical and Electronic Equipment)

!	**Note** Applicable in the European Union and other European countries with waste separation systems.

This icon on the product, or in the related documents indicates that it should not be disposed with household waste. Please, recycle responsibly to support the sustainable use of resources and prevent possible harm to human health and/or the environment.

Household users should contact the retailer where they purchased this product, or their local government office, for details on where and how they can take it for recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. Do not dispose this product with other commercial waste.

1.3 Copyright and disclaimer

This is a generic, European-wide document version. The document may show products that are not available in your location for technical, legal, commercial, or other reasons.

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The presumption for the document is that the product related safety instructions are fully obeyed. The following requirements apply to the Uponor product (including any components) as covered by the document.

- The system (combination of products) is selected and designed by a competent planner. It is installed and put into operation by a licensed and/or competent installer in compliance with the instructions provided by Uponor. Locally applicable building and plumbing codes/regulations have been obeyed.
- Temperatures, pressure and/or voltage limits according to product and design information have not been exceeded.
- The product remains in its originally installed location and is not repaired, replaced, or interfered with, without prior written consent of Uponor.
- The product is connected to potable water supplies or compatible plumbing, heating and/or cooling systems approved or specified by Uponor.

- The product is not connected to or used with third-party products, parts, or components except for those approved or specified by Uponor.
- The product does not show evidence of tampering, mishandling, insufficient maintenance, improper storage, neglect, or accidental damage before installation and being put into operation.

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2 Uponor Base thermostat display T-27 230V – Description

Uponor Base thermostat display T-27 230V (thermostat T-27) comes with a big LCD display and capacitive keys.

The temperature is displayed in large digits for easy readability also from a distance.

The capacitive keys and the front glass make cleaning of the front of the thermostat easy.

A special electronics (triac) ensures that the thermostat is operating completely noiseless and provides highest comfort in all rooms.

2.1 Thermostat features

Main characteristics for the thermostat:

- Mounting
  - on wall
  - on standard European patress box/flush mounting box
- Noiseless switching (triac)
- Can supply up to 5 actuators with power
- Optional: an external temperature sensor can be connected to the thermostat, to measure the room or floor temperature

Software features

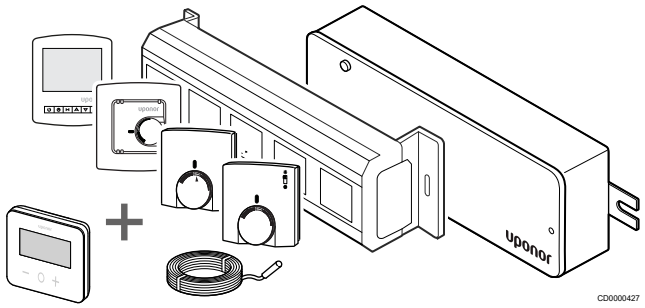
Main characteristics of the thermostat software:

- Temperature limitation
- Optional floor sensor connectivity
- Heating/cooling switch
- Regulation modes
  - **rt**: room temperature
  - **rS**: external sensor temperature
  - **rFt**: room temperature with floor temperature limitation
- Comfort/ECO modes
- Demand indication in the display
- Calibration
- Valve exercise - triggers the actuator valve to open for 2 minutes if the actuator has been closed for 3 days (72 hours)
- Factory reset

2.2 System compatibility

Note

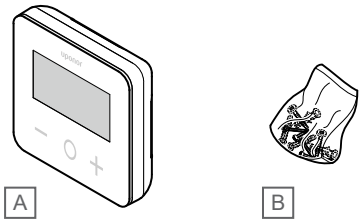
For more detailed information, product range and documentation please visit the Uponor website: www.uponor.com.



The thermostat T-27 is compatible with the current Uponor Base control system 230 V, the Uponor Base flexiboard controllers (X-24/X-25/X-26/X-27), the Uponor Base X-23 wiring box as well as the Uponor Smatrix floor/remote sensor S-1XX.

2.3 Components of the thermostat

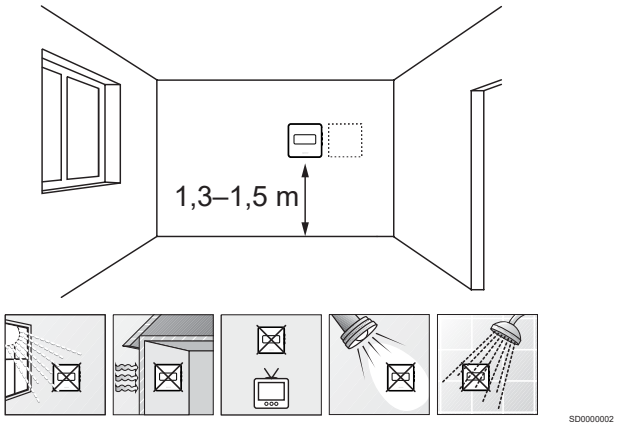
The illustration below shows the thermostat and its components.



Item	Description
A	Uponor Base thermostat display T-27 230V
B	Mounting material

3 Installation

3.1 Placement of thermostat



- Select an indoor wall and a position 1,3 m to 1,5 m above the floor.
- Make sure that the thermostat is kept away from direct sunlight.
- Make sure that the thermostat will not be heated through the wall by sunshine.
- Make sure that the thermostat is kept away from any heat source, such as television set, electronic equipment, fireplace, and spotlights. Nearby electric fires and wall - or table lamps may also prevent the thermostat from operating properly.
- Make sure that the thermostat is kept away from any source of humidity and water splashes (IP30).

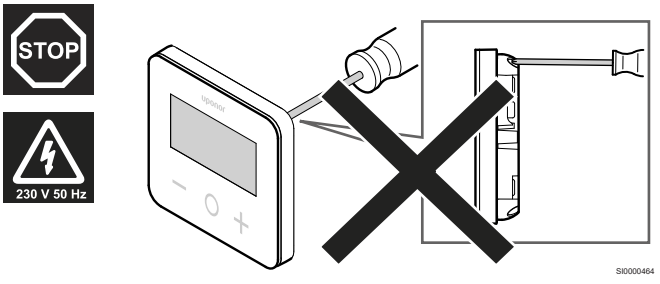
3.2 Installation procedure

Warning!

The thermostat uses 230 V AC power. Never open and/or separate the front cover from the rear face of the thermostat!

Caution!

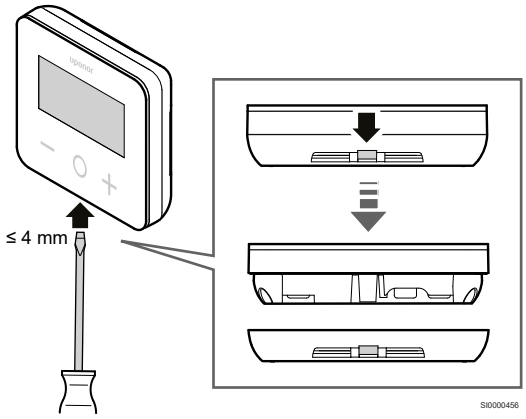
Do not push hard on the LCD screen as this may cause irreparable damage.



To install the thermostat, follow these steps:

Remove the back plastic cover

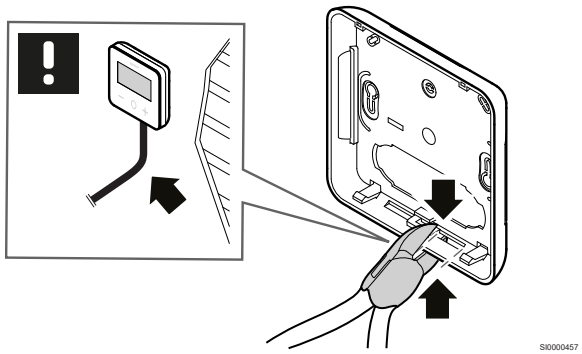
1



Use a flat screw driver/tool (width max. 4 mm) to remove the back plastic cover.

If necessary: cut the back part plastic

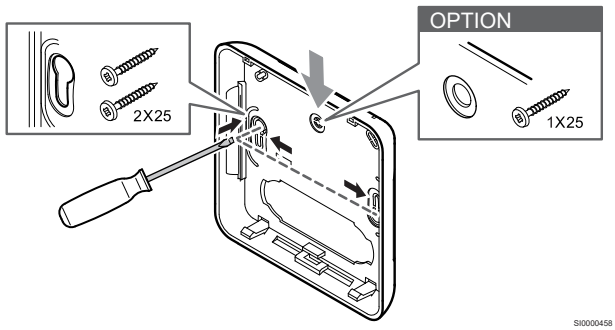
2



If the thermostat is wall mounted and the cables (or some of them) are placed on the wall, cut the back part plastic.

Remove the breakouts

3



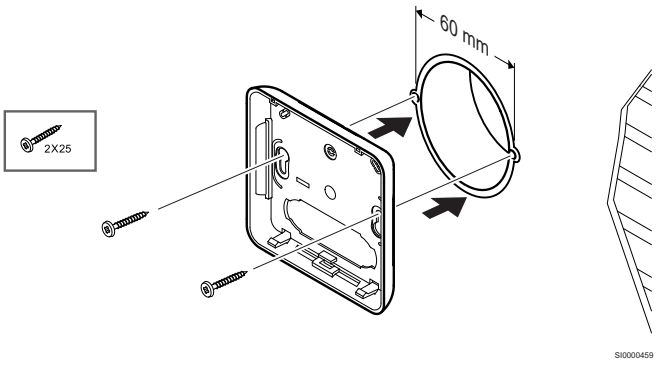
Wall mounting with 2 screws: Remove the 2 breakouts for the screws in the back cover.

Option — wall mounting with 1 screw: Remove the breakout of the center hole in the back cover.

Attach the back plastic cover to the wall

Wall box mounted

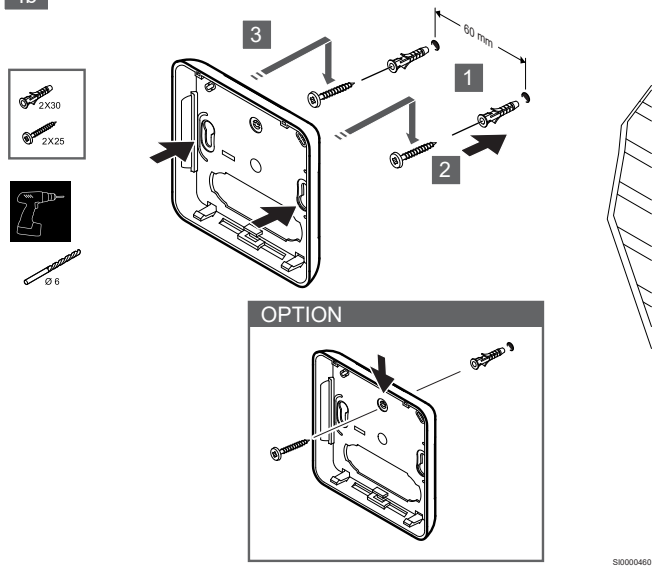
4a



Attach the back cover to the wall box.

Wall mounted

4b



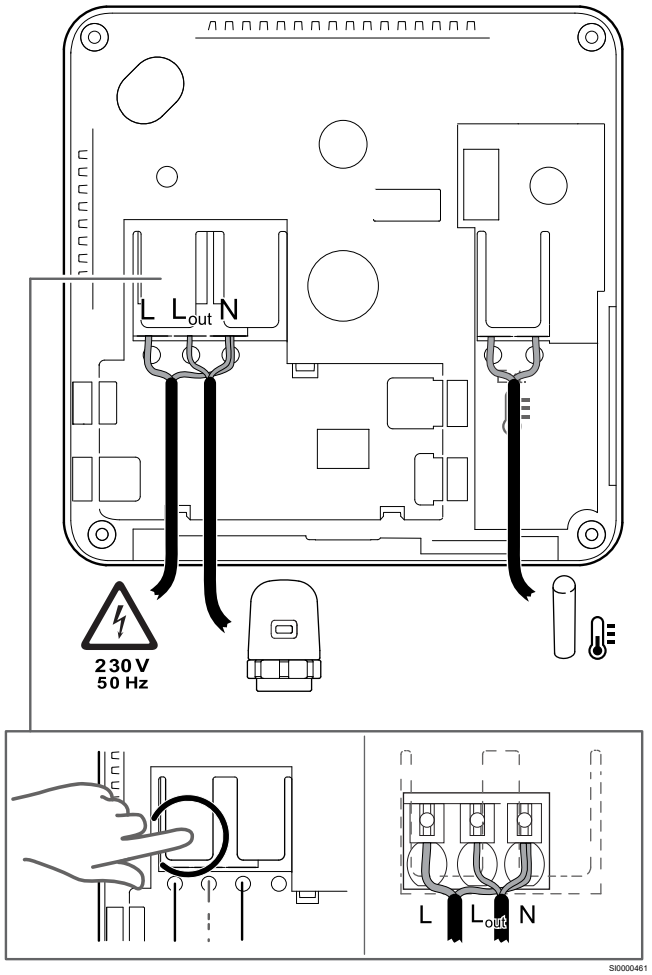
Attach the back cover to the wall with 1 or 2 screws.

Connect the thermostat

Note

Read the wiring diagram in the technical data chapter before making any electrical installation!

5

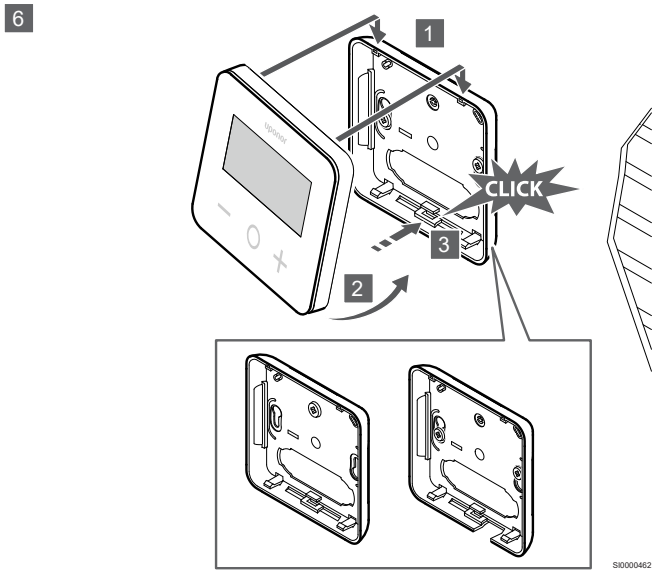


Connect the power cables to the backside of the thermostat. External sensor is optional.

The cables from the actuators can be connected directly to the thermostat or to a separate connection box.

For easier wiring, Uponor Base Flexiboard X-24/X-25/X-26/X-27 offers flexible allocation of one or more actuators to the room thermostats via selector switch during or after installation.

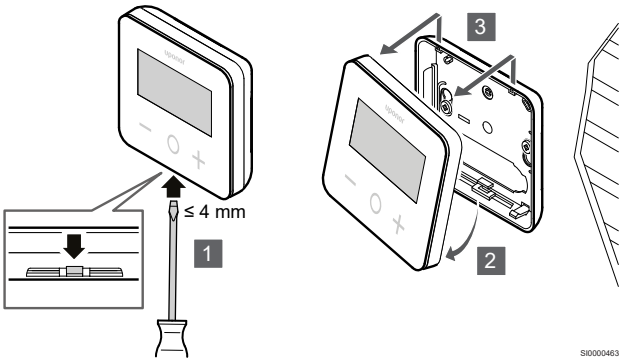
Attach the thermostat to the back cover



Attach the thermostat to the back cover.

1. Attach the thermostat body to the back cover by using the 2 hooks in the upper part as hinge.
2. Gently press the thermostat down towards the clips at the bottom of the back cover until a clicking sound is heard.
3. The thermostat is attached to the back cover.

Remove the thermostat from the wall



Press the clips at the bottom of the back cover with a flat screwdriver (width max. 4,0 mm) to unlock and remove the thermostat.

4 Operation

4.1 Activate the termostat

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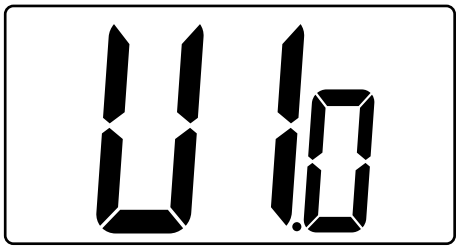
Power on/reset display



CD0000453

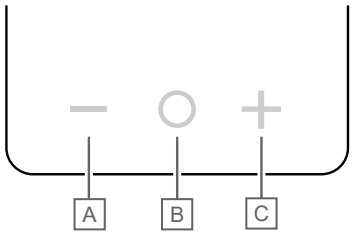
The software version is displayed after power on, or after a product reset.

Current mode

CD0000454

After the power has been set on or the thermostat has been reset, the thermostat runs current mode (Comfort or ECO).

Thermostat key descriptions



CD0000428

Key/icon	Description
—	Minus/decrease
O	OK
+	Plus/increase

Press a key on the thermostat T-27 to initiate an action related to that key.

— and + keys

The keys **–** and **+** are used to

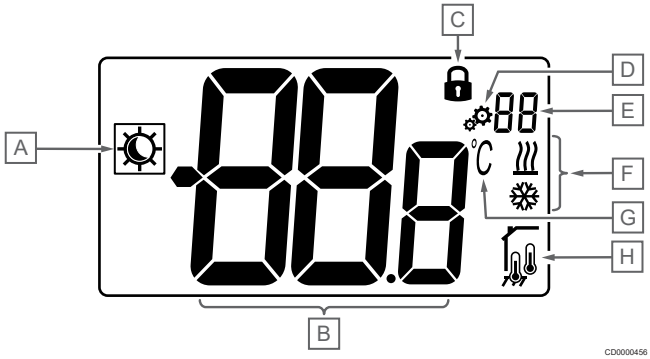
- Adjust setpoint temperature
- Move from one parameter to the next/previous one in the settings menu

O (OK) key

The key **O** (OK) is used to

- Display temperature measure
- Toggle between current status data, and values of available sensors connected to the thermostat
- Enter and exit the settings menu (holding the key for about **3 seconds**)
- Confirm a setting

4.2 LCD display descriptions



CD0000456

Symbols/icons

The figure shows all possible symbols and characters that can be shown on the display:

Item	Icon	Description
A	☼ / ☾	**Comfort/ECO modes** Visible depending on the selected mode
B	88.8	**Temperature** Value from internal or external temperature sensor
C	🔒	Locked display and keys
D	⚙	Settings
E	88	Settings menu number
F	≋ / ❄	Heating/cooling demand on the display
G	°C	Temperature unit

Item	Icon	Description
H	Type of measured data and sensor used for system regulation:	
		Room temperature sensor (rt)
		Room temperature with external floor sensor (rFt)
		Remote temperature sensor (rS)

Display text

The following table contains an overview of all the display texts with reference to the respective sections where they are described.

Display text		Description	Settings menu number
00.5		ECO mode setback temperature	03
CLd		Cooling mode	01
Cmf		Comfort mode	02
dls		Lock keys and display function	09
Eco		ECO mode	02
Err		Error	—
FL.H		High limitation of floor temperature	05
FL.L		Low limitation of floor temperature	06
Hot		Heating mode	01
HYS		Hysteresis value	13
MAH		Maximum heat Maximum value of setting range of the setpoint temperature	12
Min		Minimum Minimum value of setting range of the setpoint temperature	11
Mod		Mode Heating/cooling modes	01
no		Calibration of internal room sensor	07
no		Calibration of external room sensor	08
rEG		Regulation selection	04
rES		Factory reset	—
rFt		Room temperature with external floor sensor	04
rS		Remote sensor	04
rt		Room temperature	04
U1.0		Software version	10
YES		Yes	07/08

4.3 Display temperatures (Comfort/ECO)

Follow below instructions to **display the temperatures**:

1. Press the key **—** or **+** to see the setpoint
2. Press the key **O** (OK) to display the room temperature and floor temperature (external sensor must be connected and the regulation set to rFt)

4.4 Temperature setpoint (Comfort/ECO)

The Comfort/ECO temperature setpoint is continuously monitored.

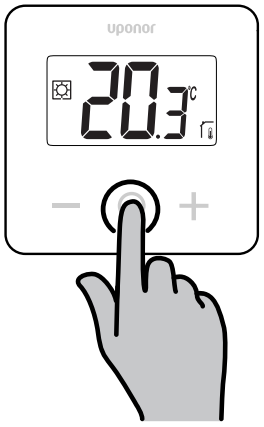
Follow below instructions to **modify the temperature setpoints**:

1. Press the key **—** or **+** to see the current temperature setpoint
2. Press the key **—** or **+** again to modify the setting temperature
3. Press the key **O** (OK) to confirm the temperature setpoint value

4.5 Settings

Note

After 1 minute of user inactivity in the settings menu, the thermostat returns automatically to the current mode.



SI0000427

Settings menu overview

The following table contains an overview of all the settings with reference to the respective sections where they are described.

Settings menu number	Name	Description
01	Mod	*Heating/cooling modes, Page 11*
02	Eco	*Comfort/ECO modes, Page 11*
03	Setback	*ECO mode setback temperature, Page 11*
04	rEG	*Regulation selection, Page 12*
05	FL.H	*High limitation of floor temperature, Page 12*
06	FL.L	*Low limitation of floor temperature, Page 12*
07	no	*Calibration of internal room sensor, Page 12*
08	no	*Calibration of external room sensor, Page 13*
09	dls	*Lock keys and display function, Page 13*
10	U1.0	*Software version, Page 14*
11	Min	*Min. value of setting range of the setpoint temperature, Page 14*

Settings menu number	Name	Description
12	MAH	*Max. value of setting range of the setpoint temperature, Page 14*
13	HYS	*Hysteresis value, Page 14*
—	rES	*Factory reset, Page 14*

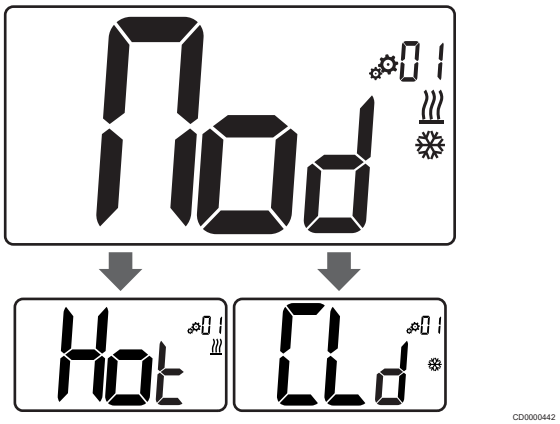
Enter the settings menu

The settings menu is accessible in both Comfort and ECO modes.

Follow below instructions to enter the settings menu:

1. Press the key **O** (OK) for **3 seconds**
2. Scroll up and down in the menu with the keys **—** and **+**
3. Select the desired menu by pressing the key **O** (OK)
4. Change the value with the keys **—** and **+**
5. Press the key **O** (OK) to confirm the settings
6. Press the key **O** (OK) for **3 seconds** to return to the current mode

4.6 Heating/cooling modes

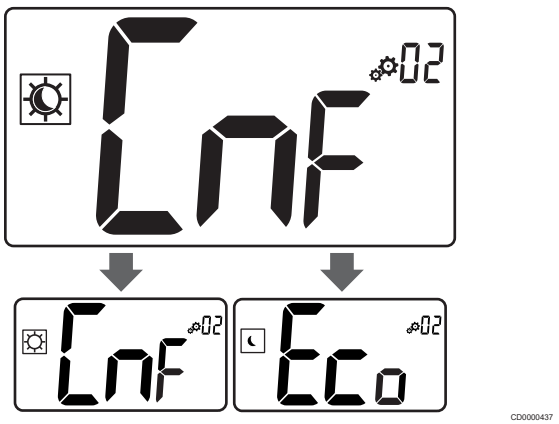


CD0000442

Values: **Hot/CLd**

Value	Description
Hot	Heating mode (default)
CLd	Cooling mode

4.7 Comfort/ECO modes



CD0000437

Values: **Comfort/ECO modes**

Value	Description
CmF	Comfort mode (default)
Eco	ECO mode

Comfort mode

Setpoint setting	Step	Temperature range
21 °C	0,5 °C	5,0 °C to 35 °C

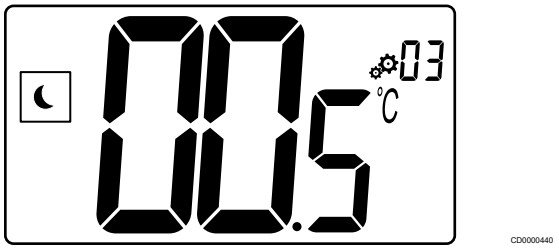
If no limitation is defined, please see the settings menu

ECO mode

Setpoint setting	Step	Temperature range
17 °C	0,5 °C	5,0 °C to 31 °C

If no limitation is defined, please see the settings menu

4.8 ECO mode setback temperature



CD0000440

Description	Value
Default value	4 °C
Step	0,5 °C
Values	0 °C to 11 °C

Calculation of ECO setpoint temperature

When the mode is changed from Comfort to ECO, the value displayed as setpoint temperature is:

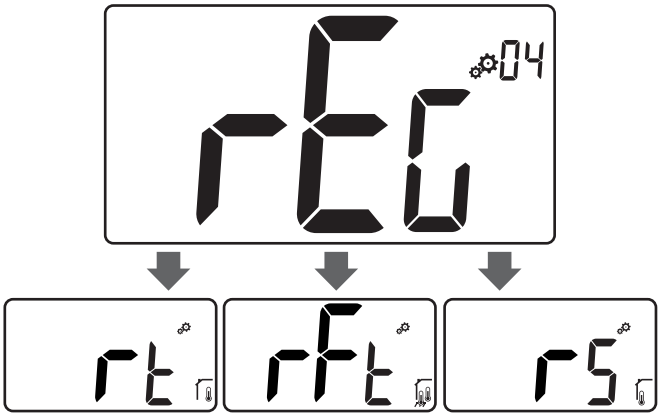
- Comfort setpoint – ECO setback (in heating)

or

- Comfort setpoint + ECO setback (in cooling)

When the mode is changed from ECO to Comfort, the value shown as setpoint temperature is only the setpoint.

4.9 Regulation selection



CD0000438

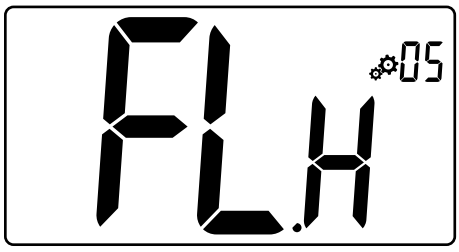
Description	Value
Default value	rt
Values	rt/rFt/rS

Mode	Icon	Sensor	Description
rt		Internal	Indoor temperature The room temperature is measured with the internal sensor in the thermostat
rFt		Internal & external	Indoor temperature with floor temperature limitation The room temperature is measured with the internal sensor in the thermostat, and the floor temperature with external sensor Press the key O (OK) to switch between room temperature and floor temperature
rS		External	Remote sensor temperature The room or floor temperature is measured with an external sensor

4.10 High limitation of floor temperature

Note

This value is displayed only when the setting “**rEG**” is set on "**rFt**".



CD0000443

Description	Value
Default value	26 °C
Step	0,5 °C
Values	20 °C (or "FL.L") to 35 °C

4.11 Low limitation of floor temperature

Note

This value is displayed and set only if the parameter “**rEG**” is set on "**rFt**".

CD0000446

Description	Value
Default value	20 °C
Step	0,5 °C
Values	10 °C to 30 °C (or "FL.H")

4.12 Calibration of internal room sensor

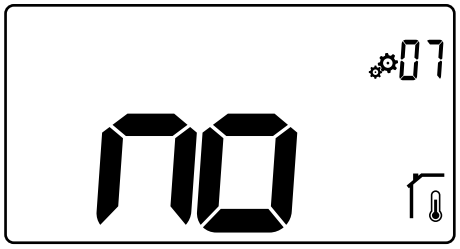
Note

This menu is only displayed if the parameter "**rEG**" is set with "**rt**" or "**rFt**".

Note

If the keys **—** and **+** are pressed simultaneously, the sensor calibration is reset.

"**no**" is displayed



CD0000435

Description	Value
Default value	No (0,0 °C)
Step	0,1 °C
Values	-3,0 °C to 3,0 °C

The indicator says "**no**" (correction value is zero) when the calibration mode is entered for the first time. This means no calibration has been performed yet.

Enter the reading on the thermometer using the keys **—** and **+** (step of 0,1 °C).

The setting is validated with key **O** (OK).

4.13 Calibration of external room sensor

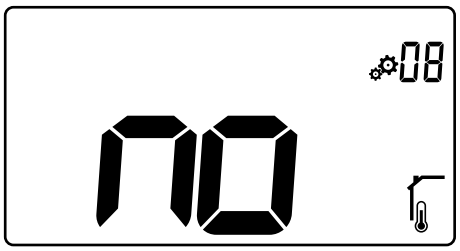
Note

This menu is only displayed if the parameter "**rEG**" is set with "**rS**" or "**rFt**".

Note

If the keys **—** and **+** are pressed simultaneously, the sensor calibration is reset.

"**no**" is displayed



CD0000434

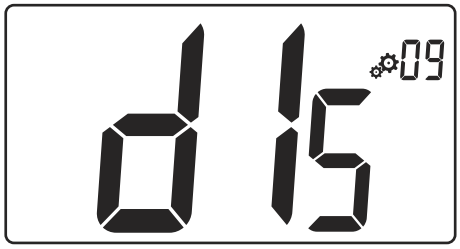
Description	Value
Default value	No (0,0 °C)
Step	0,1 °C
Values	-3,0 °C to 3,0 °C

The indicator says "**no**" (correction value is zero) when the calibration mode is entered for the first time. This means no calibration has been performed yet.

Enter the reading on the thermometer using the keys **—** and **+** (step of 0,1 °C).

The setting is validated with key **O** (OK).

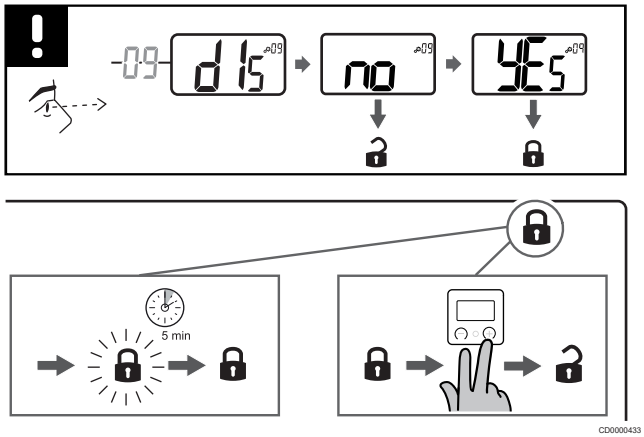
4.14 Lock keys and display function



CD0000450

Value	Description
Yes	Activate the lock display and keys
No	Deactivate the lock display and keys

The "**lock keys and display function**" is used to lock the thermostat keys and LCD display.



CD0000433

Lock keys and display

Follow the instruction below to activate the lock function of the thermostat display and keys:

1. Press the key **O** (OK) for **3 seconds**
2. Scroll up in the menu with the key **+** to **09 dIs**
3. Select the desired menu by pressing the key **O** (OK)
4. Change the displayed value "**no**" to "**Yes**" with the key **+**
5. Press the key **O** (OK) to confirm the settings
6. Press the key **O** (OK) for **3 seconds** to return to the current mode
7. The lock icon on the display starts flashing
8. After 5 minutes of inactivity, the lock icon stops flushing and the thermostat is locked

Unlock keyboard and display

Temporary deactivation of the lock function

Follow the instruction below to temporarily deactivate the lock function of the thermostat display and keys:

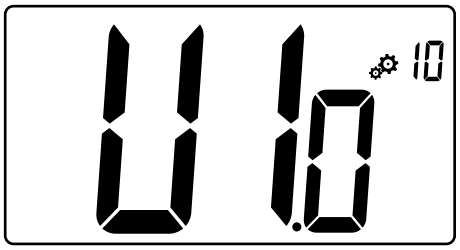
1. Press the keys **—** and **+** during **5 seconds**. The lock icon starts flashing.
2. Make necessary changes in the setpoint, navigate in the settings menu and change parametres.
3. After 5 minutes of inactivity, the thermostat will automatically be locked again.

Complete deactivation of the lock function

Follow the instruction below to completely deactivate the lock function of the thermostat display and keys:

1. Press the keys **—** and **+** during **5 seconds**. The lock icon starts flashing.
2. Press the key **O** (OK) for **3 seconds**
3. Scroll up in the menu with the key **+** to **09 dIs**
4. Select the desired menu by pressing the key **O** (OK)
5. Change the displayed value "**Yes**" to "**No**" with the key **+**
6. Press the key **O** (OK) to confirm the settings
7. Press the key **O** (OK) for **3 seconds** to return to the current mode
8. The lock icon on the display disappeare and the thermostat is unlocked

4.15 Software version

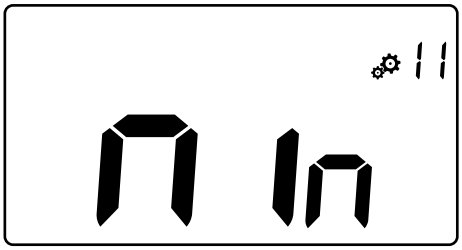


CD0000436

Press and hold the key **O** (OK) to display the software version and debug information.

The software version is written: **Vx.x**.

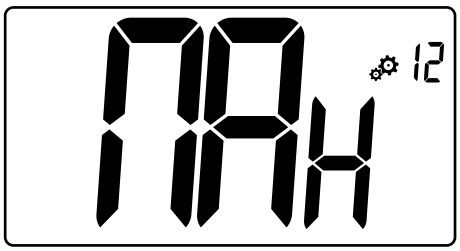
4.16 Min. value of setting range of the setpoint temperature



CD0000448

Description	Value
Factory settings value	5,0 °C
Values	5,0 °C to 15,0 °C

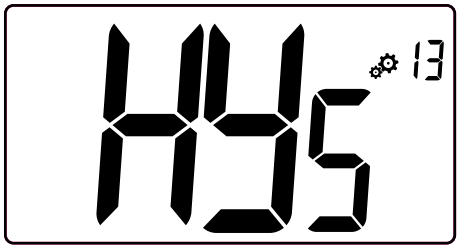
4.17 Max. value of setting range of the setpoint temperature



CD0000447

Description	Value
Factory settings value	30,0 °C
Values	20,0 °C to 37,0 °C

4.18 Hysteresis value



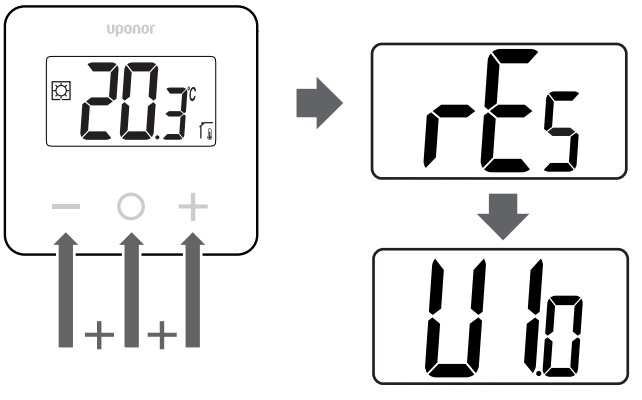
CD0000444

Description	Value
Default value	0,3 °C
Step	0,1 °C
Values	0,2 °C to 3 °C

Follow the instruction below to set the hysteresis value:

1. Use the keys **—** and **+** to set the hysteresis value
2. Validate the settings with the key **O** (OK)

4.19 Factory reset



SI0000423

Follow below instructions to **reset the thermostat (factory reset)**:

1. Hold all three keys **—** and **O** (OK) and **+** for **10 seconds**
2. The thermostat is reset with factoring settings

5 Troubleshooting

5.1 Temperature measurement errors

Note

The error can be identified in the regulation settings (04) for respective sensor mode rS/rt/rFt.

The thermostat can fail to measure the temperature due to connection problems with the temperature sensor.

If the selected mode is "**rS**", the display shows "**Err**".

Change the mode to "**rt**" to continue working with the internal sensor or replace the external sensor.

Internal sensor (rt)

CD0000445

In "**rt**" mode, "**Err**" is displayed and the icon internal sensor is shown.

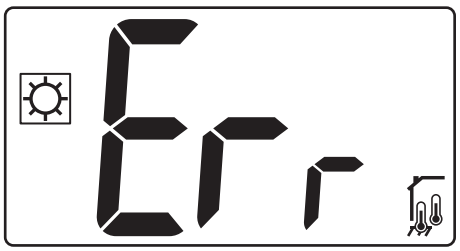
External sensor (rS)

CD0000441

In "**rS**" mode, "**Err**" is displayed and the icon external sensor is shown.

Internal and external sensors (rFt)

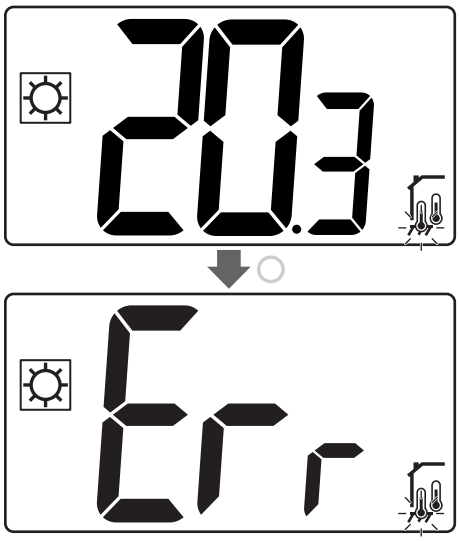
rFt - Internal sensor error



CD0000487

If the **internal sensor fails**, "**Err**" and the internal + floor sensor icons are shown.

rFt - External sensor error



CD0000486

If the **external (floor) sensor fails**, the thermostat carries on to measure the temperature with the internal sensor.

- The icon with internal and floor sensors is shown, but the floor sensor flashes.
- Press the key **O** (OK) and "**Err**" is shown instead of the floor temperature, and the floor sensor icon flashes.

6 Technical data

6.1 Technical specifications

Description	Value
Product name	Uponor Base thermostat display T-27 230V
IP	IP30 (IP: degree of inaccessibility to active parts of the product and degree of water)
Max. ambient RH (relative humidity)	60 % at 20 °C
Marking	CE, UKCA, EAC
ERP	Class I
Power supply	230 V AC, 50 Hz
Operating temperature	0 °C to +50 °C
Wired control	TRIAC 230 V
Storage temperature	-20 °C to +60 °C
Room temperature sensor (rt)	CTN 10 K at 25 °C
External temperature sensor	CTN 10 K at 25 °C
Thermostat colour	Thermostat body RAL 9016 Transparent front glass

Regulatory conformance

The Uponor Base thermostat display T-27 230V complies with the following directives.

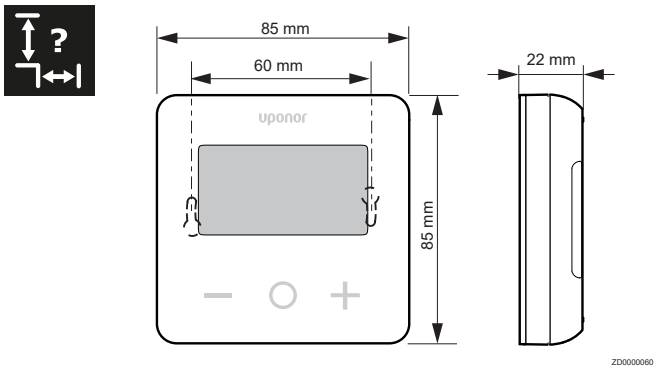
- CE
- UKCA
- EAC

EU/UK Declaration of conformity
Hereby, Uponor declares that the Uponor Base thermostat display T-27 230V is in compliance with the relevant Community harmonisation legislation. [1)] The full text of the EU/UK declaration of conformity is available at the following internet address: https://www.uponor.com/doc/1120075

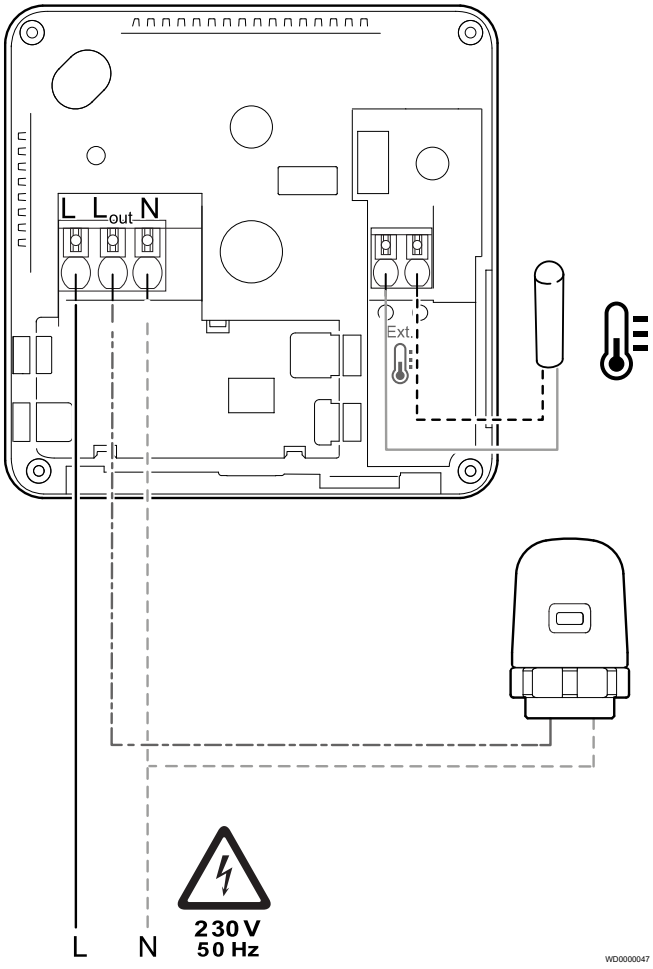
1) Refer to the related Uponor product for the specified certification and compliance marks.

Additional product information and instructions are delivered with the Uponor product. They are available at the website www.uponor.com/services/download-centre and at the national Uponor websites in local language.

6.2 Dimensions

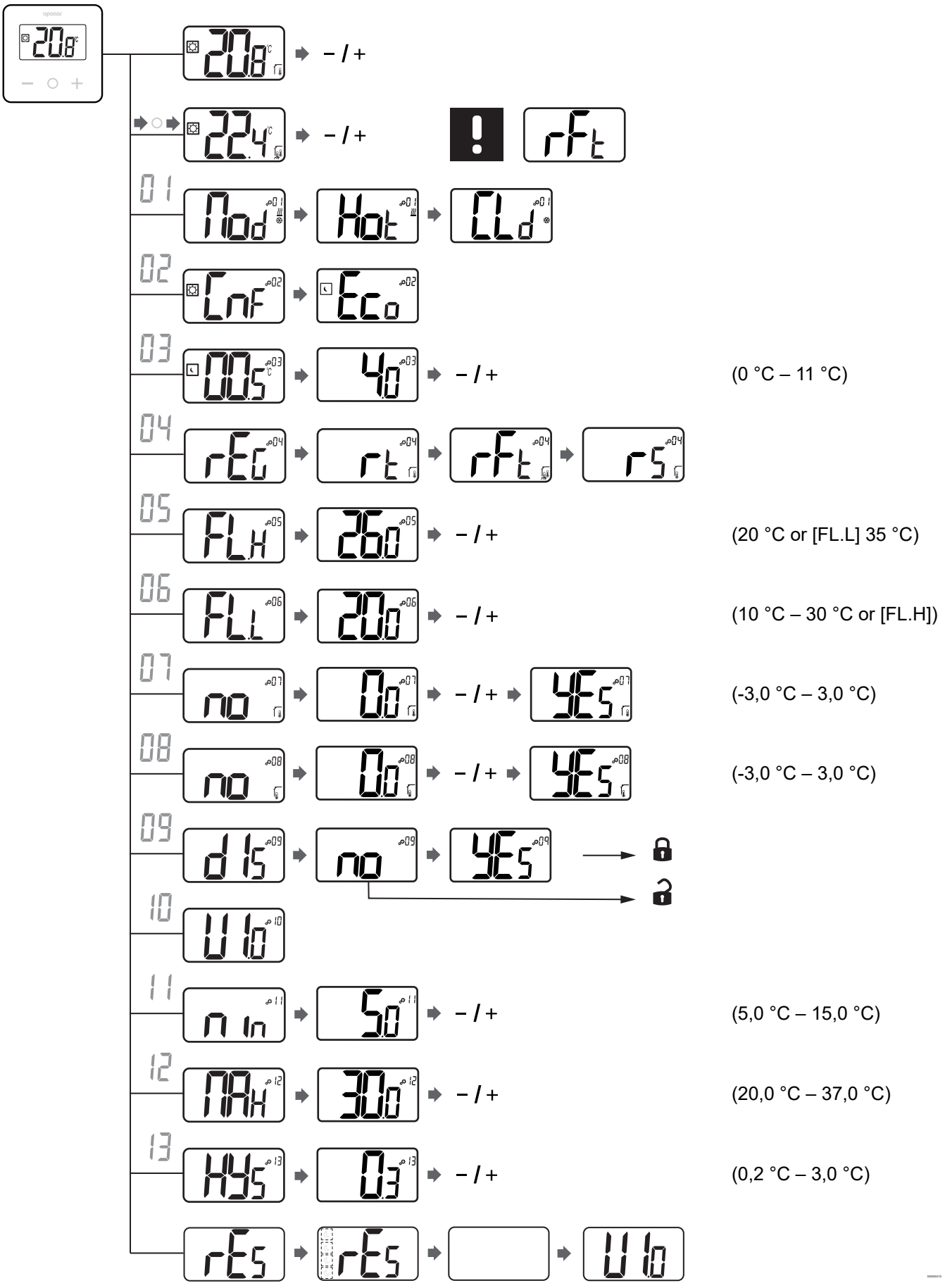


6.3 Wiring diagram



Item	Connection	Description
A	L	Power
B	L out	Actuator
C	N	Neutral
D		External sensor
E		External sensor

6.4 Menu description



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