WT-D03 HC

Wired digital Heat&Cool room thermostat
Vision® Wired

Installation manual

EN **User guide**
DE **Benutzerhandbuch**
FR **Manuel d'utilisation**
NL **Gebruikershandleiding**
IT **Manuale d'uso**
ES **Guía de Usuario**
DA **Brugervejledning**
SV **Bruksanvisning**
NO **Bruksanvisning**
FI **Käyttöopas**
RU **Руководство по эксплуатации**
PL **Instrukcja obsługi**

wattswater.eu

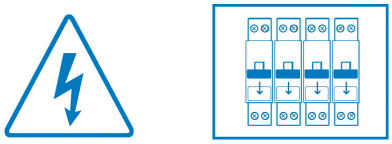
WATTS®

Table of content

General information

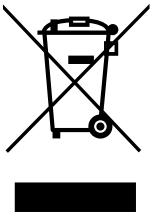
Safety warnings and operating instructions

- This product should be installed preferably by a qualified professional. Subject to observation of the above terms, the manufacturer shall assume the liability for the equipment as provided by legal stipulations.
- All instructions in this Installation & Operation manual should be observed when working with the thermostat. Failures due to improper installation, improper use or poor maintenance are voiding manufacturer liability.



- Any attempt to repair voids the responsibility and the obligation to guarantee and replacement from the manufacturer.
- Do not cover the thermostat for accurate measurement of ambient temperature. Therefore the sensor must never be hidden behind thick curtains, furniture, etc… Alternatively, a remote sensor should be used.

- 2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info



Application

- The thermostat have been designed for use in residential rooms, office spaces and industrial facilities. Verify that the installation complies with existing regulations before operation to ensure proper use of the installation.

Please refer to « Quick Installation Guide » for thermostat installation

https://wattswater.eu/wt-d03/

1. Presentation

•Thermostat compatible with **Vision® Wired** system**.**
- 3 sensitive touch buttons.
- 4 wires connectivity.
- Different temperature modes setting.
- Anti freeze function.
- Configurable **Hysteresis or PWM** regulation.
- Pin Code & screws lock for public area.
- EEPROM non volatile memory.
- 2 parameter menus: User and Installer.

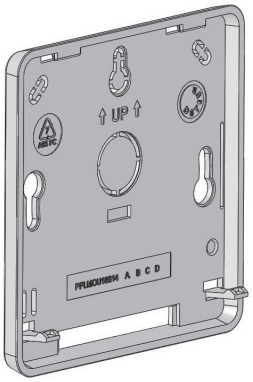
In option
External sensor with several possibilities of regulation (Floor, remote, combined...).

2. Box contents

1 x

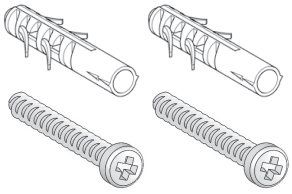
WATTS Vision® thermostat

1 x



Back cover

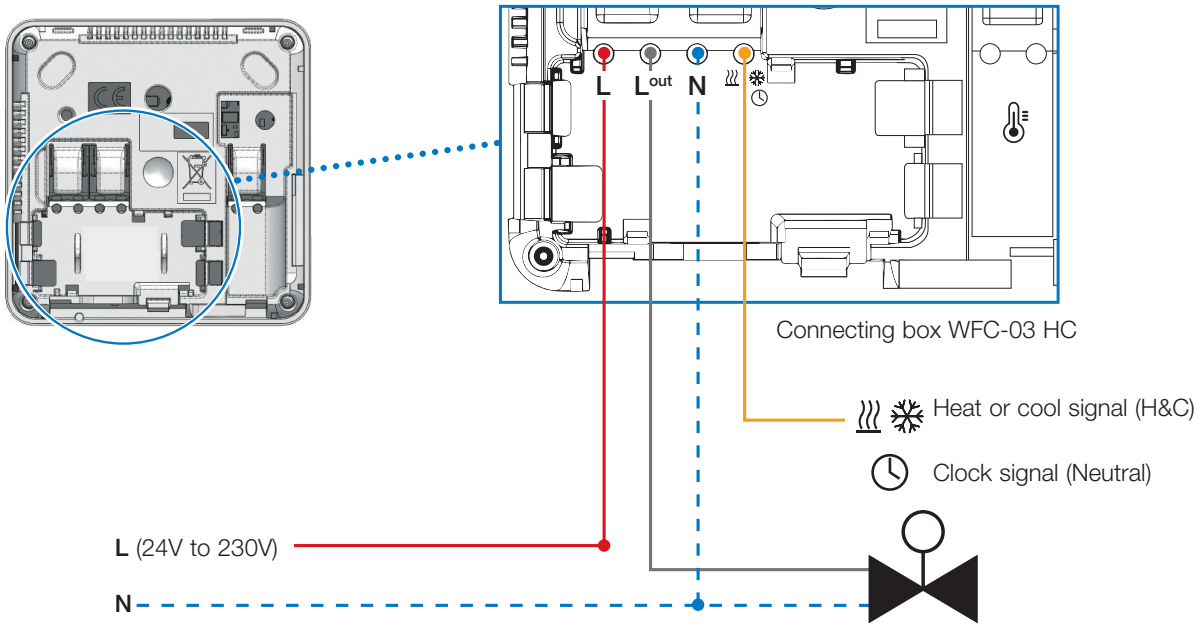
1 x



Fixing screws

3. First Installation

Please refer to the Quick Installation Guide.



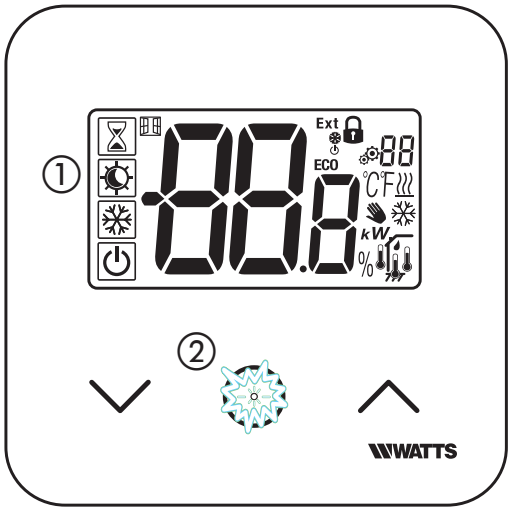
When thermostat is started, it launch is initialization procedure:

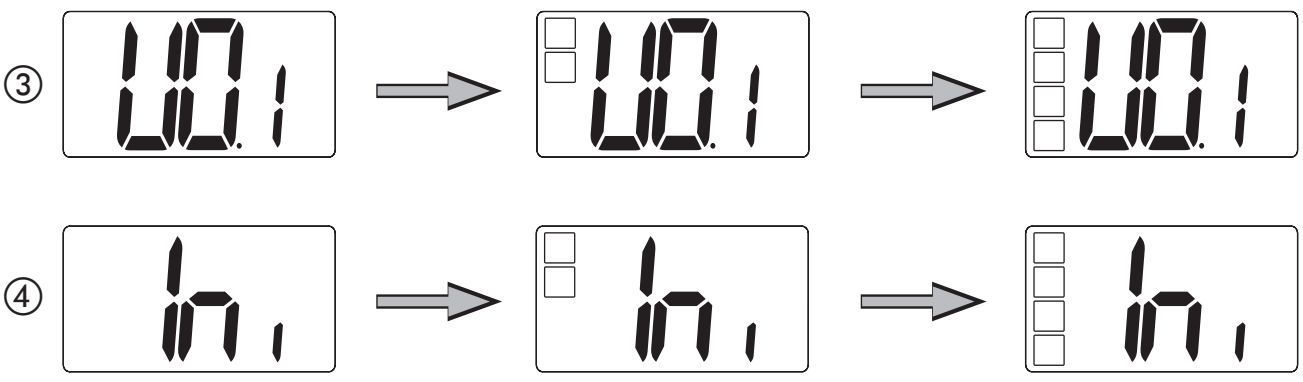
① All segment of the LCD screen are displayed

② The led is blinking white

③ LCD screen display the software version

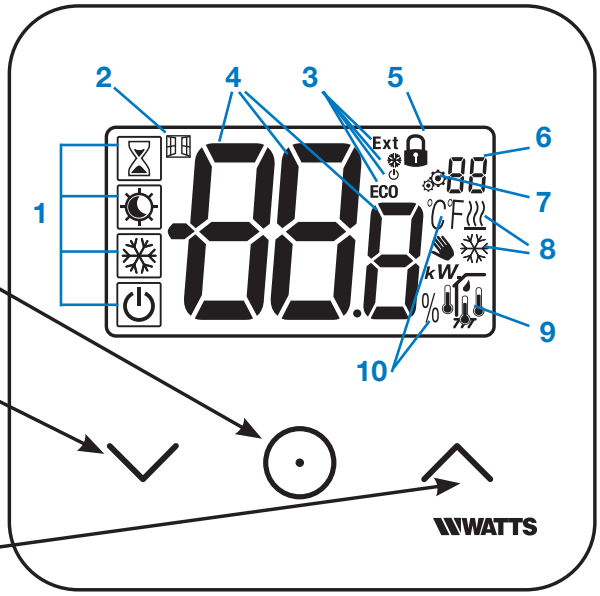
④ Thermostat initialize its internal configuration according to H&C signal





4. Product description

Validation of temperature set point setting or accessing to parameter menu or displaying measured temperature/ temperature set point.



Minus button or down/left button for menu navigation.

Plus button or up/right button for menu navigation.

4.1 LCD logo description

1. Icon showing current operating mode of thermostat with left to right:
   Thermostat is in master configuration when logo mode is with frame .
   Thermostat is in slave configuration when logo is without the frame .

Boost/timer mode

Comfort mode in heating mode

Reduced/ECO mode

Frost protection mode

Off mode when “reversible” mode is activated

2. Open window function

3. Displaying of reduced clock and heating & cooling order:
   - **Ext** order is applied to heating system
   - **ECO** order of reduced set point mode
   - order of cooling configuration
   - order of stop

4. Measured temperature/temperature set point/ remaining time for boost mode

5. Locked keyboard

6. Parameter menu number

7. Parameter menu

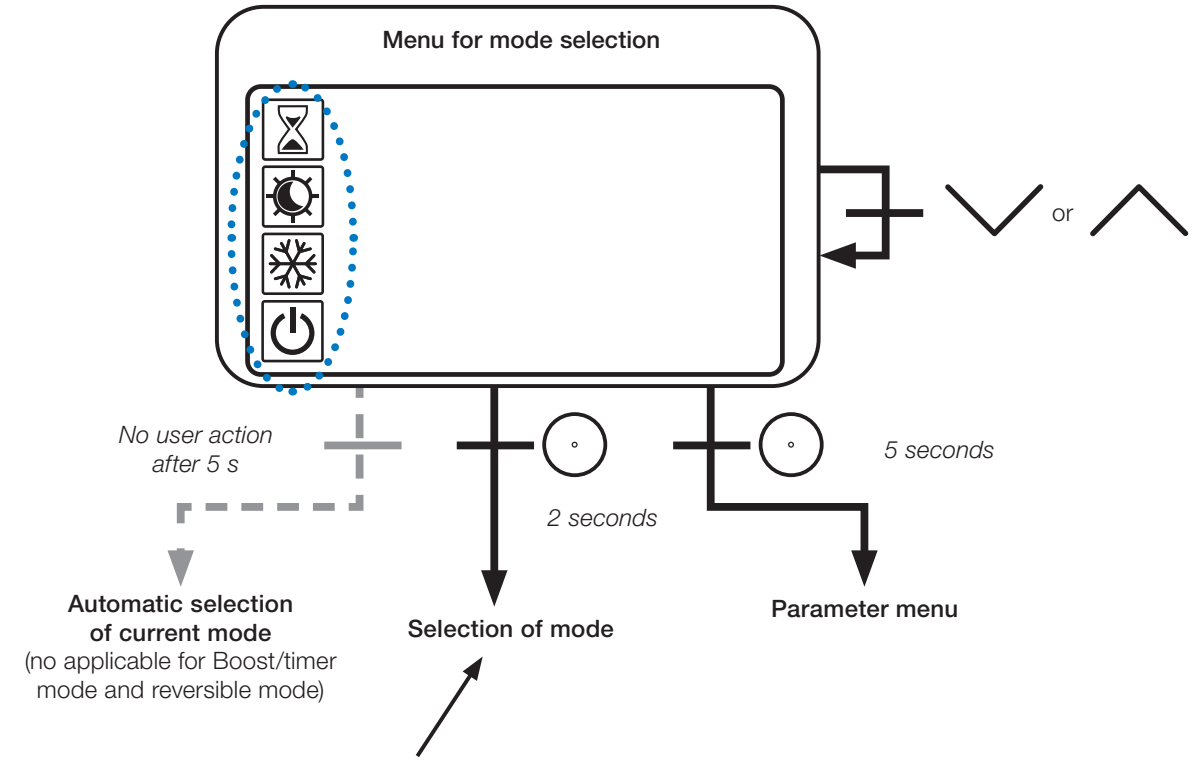
8. Indication of heating and cooling demand

9. Type of measured data & sensor used for system regulation:

- Humidity measurement & control
- Internal temperature sensor
- Ambient temperature sensor
- Floor temperature sensor
- Internal and floor temperature sensor

10. Temperature units °C or °F or measurement of humidity rate %

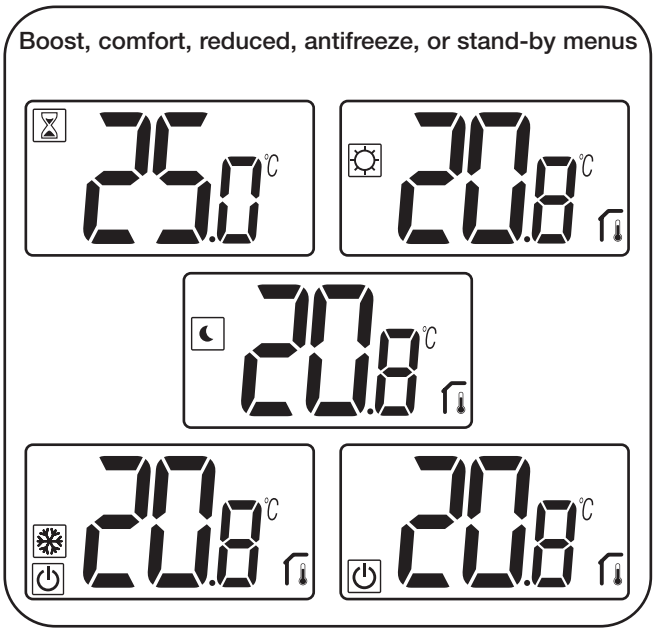
5. Mode selection



Press any ⌄ ⊙ ⌃ key to wake-up the thermostat and activates the backlight.

Hold ⊙ key for 2 second to access to **menu for selection of mode**.

Press ⌄ or ⌃ permits to change navigate in different **mode**.



If “basic navigation” is activated, navigation menu will be:

If “reversible mode” is activated (see paragraph 5.6 “Reversible mode” for more details), navigation menu will be:

5.1 Change temperature setting

Wake-up the thermostat by pressing any key.

Press ⋁ or ⋀, **to change the temperature** (set point (digits starts to blink).

By pressing validation key ⊙ temperature set point value is validated.

5.1.1 Boost/Timer mode

In mode boost, set point temperature is applied during a selected time.

After this time, thermostat will return to former mode.

You can first adjust, the desired setting temperature with ⋁ or ⋀, press validation key ⊙ to validate, default value 24°C.

In a second time, you can adjust the du- ration in hours “H” if below 24H, then in day “**d**”.

With automatic H&C switching configuration, boost/timer mode can’t be selected.

If configuration system is changed by H&C signal, boost/timer mode will be stopped.

Thermostat will return to the previous selected mode.

Default value: “no” (0 minute)

Value range: 1h to 23 hours (step of 1 hour) and 1 day to 44 days (step 1 day).

5.1.2 Comfort mode

In this mode, comfort temperature set point will be followed all the time.

This mode can’t be selected if thermostat is a “slave” product and H&C signal sends reduced information.

5.1.3 Reduced/ECO mode

In this mode, reduced temperature set point will be followed all the time.

This set point corresponds to comfort set point reduced by an offset (see paragraph 7.2 “User parameter description”).

Reduced/ECO mode is available if if thermostat is in master configuration;

If H&C signal is in ECO mode and the thermostat is configured in slave, the thermostat is set automaticaly in ECO configuration.

Note: In cooling mode, reduced mode acts like the OFF mode (system is stopped, NC actuators are closed).

Thermostat is in master configuration when logo mode is .

Thermostat is in slave conf iguration when logo is without the frame .

Important notes:

- With “Floor Limit” regulation, Reduced/ ECO mode couldn’t work properly if “Low limit” value is too high.
- If system configuration is automatic H&C switching and thermostat is system master, user can’t set derogation.
- If configuration system is changed by H&C signal, setpoint derogation will be stopped.

5.1.4 Anti-freeze mode

Use this mode if you want to protect your installation against freezing (default value 7°C).

Remark: in cooling mode, Anti-freeze mode acts like the OFF mode (system is stopped).

If “floor limit” regulation is set by user/ installer, selecting anti-freeze mode stops “floor limit regulation”.

Antifreeze temperature setpoint is applied when opened window is detected.

5.1.5 OFF mode

Use this mode if you need to switch off your installation.

Be Careful: In this mode your installation can freeze.

- With off mode, “ floor limit” regulation is stopped.

5.1.6 Reversible mode

This mode allow to switch between the heating and cooling system, the changeover can be managed by the thermostat in Master mode (manual or automatic) displayed in Slave mode (H&C signal at the thermostat input).

6. Functions Highlights

6.1 Reversible mode

Reversible menu access

Enter user parameter 07, use keys ∨ and ∧ to select operating mode of the thermostat:

- **Hot** : heating regulation mode
- **CLd** : cooling regulation mode
- **rEv** : activation of reversible mode in menu
- **Aut** : automatic Heat/Cool mode.

Pressing key ⊙ confirms the selection and switches to comfort mode.

A user inactivity of some seconds confirms current selection and returns to old selected mode.

By pressing ⊙ key, temperature set point value is validated.

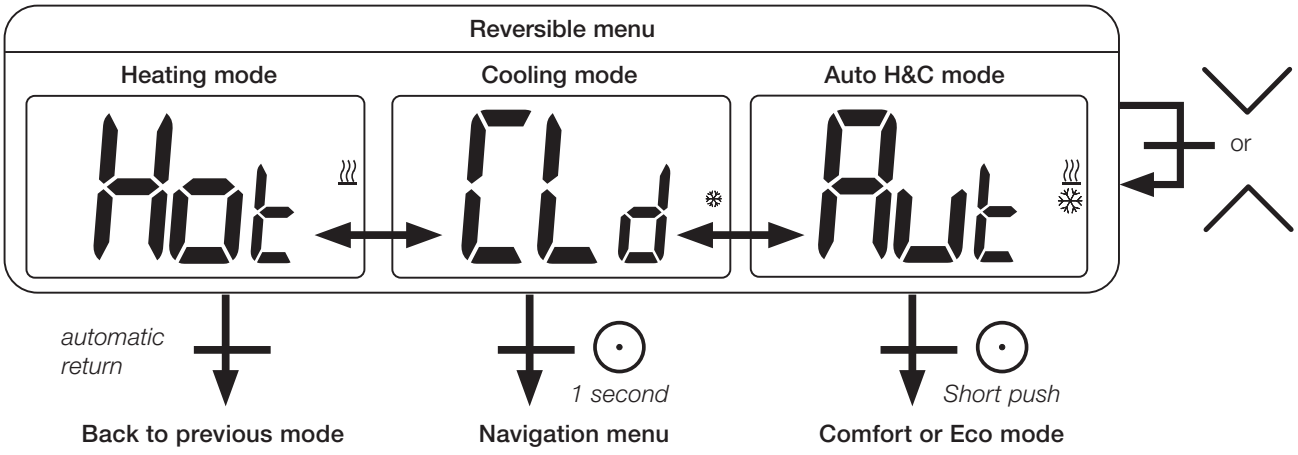
Once the reversible mode has been selected, the change of mode is made as follows:

Press 2s on ⊙ to access the menu mode selection menu. Then go down below the OFF mode until the 4 blank icons are displayed:

Select with ⊙, then select the «Hot» heating mode or «Cld cooling mode using ∨ and ∧ keys.

Pressing the ⊙ key for 1s confirms the mode selection.

User inactivity of a few seconds keeps the thermostat in the previous mode.



6.2 Opened windows detection

Enter user parameter 06.

When activated and a detection is running, the icon will appear and blink on the screen!; This function is done by measuring and recording the temperature evolution.

When an opened window is detected, the thermostat applies to heating system antifreeze temperature set point.

User can restart heating system, and stops window detection by pressing on a key.

6.3 Keyboard locking

Wake-up the thermostat (lighted backlight).

Press and hold ∨ and ∧ keys simultaneously.

Once locking is activated, logo appears on the LCD screen:

6.4 PIN code

To activate this function enter user parameter 9.

The PIN code protect the thermostat from any change of the setting as temperature or mode.

When user pushes a key, “PIN” will be displayed.

If user press another time a touch, he has to enter PIN number.

6.5 Heating and cooling indications

Logos used to indicate than system requires:

heating is ; cooling is .

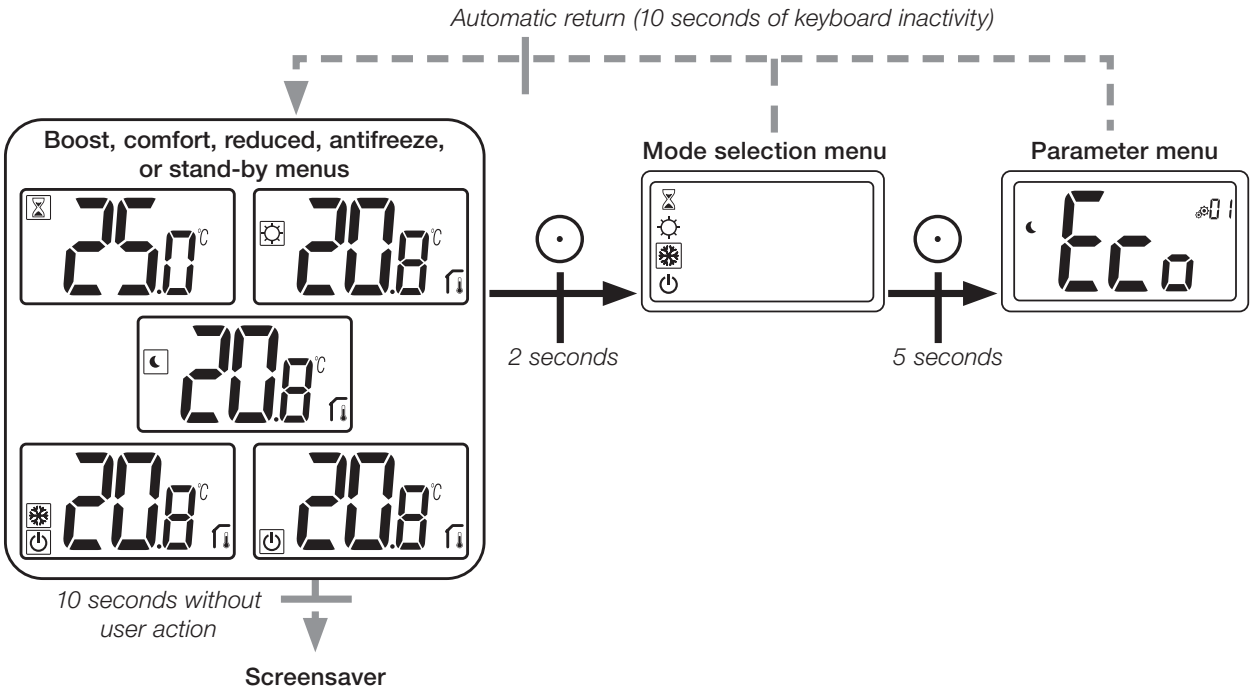
6.6 LED indication

When user modify set point temperature in functioning mode, behavior information is displayed with a multicolored LED located on the middle of validation key.

Temperature	LED color
T ≤ 18°C	blue
18°C < T ≤ 20°C	azure
20°C < T ≤ 22°C	green
22°C < T ≤ 24°C	orange
T ≥ 24°C	red

7. User parameters

7.1 Access to user parameter menu



Press any key to wake-up the thermostat and activates the backlight.

By pressing key ⊙ during 5 seconds, user can access to parameter menu.

The menu scroll is done with keys ∨ and ∧.

Menu is selected by pressing key ⊙, value starts blinking.

Once in the menu, the parameter value is changed with the keys ∨ and ∧.

Pressing again key ⊙ sets the parameter value.

Note: Thermostat parameters are divided into two groups: user and installer (advanced menu).

7.2 User parameter description

ECO/Reduced offset setting

Default value: **2,0°C** Values: **0,0°C** to **5,0°C**

“basic navigation” mode

« **Yes** » : activation of function, restrict to comfort and off mode

« **no** » : no activation

Default value: **no** Values: **Yes** / **no**

Room temperature display

« **Yes** » : remote displays measured temperature

« **no** » : remote displays set point temperature

Default value: **Yes** Values: **Yes** / **no**

Calibration of internal room sensor (remote)

This menu is only displayed if parameter rEG (#20) is set with “Air” or “Fll”.

Calibration must be done after a given order has been operating for a day. Place the thermometer in the middle of the room at about 1.5 m above the floor. Record the temperature shown after 1 hour. When you enter calibration mode, displaying of logo means no calibration has been performed yet. Enter the reading on your thermometer using minus and plus keys (step of 0.1°C).

The setting is validated with validation key. logo appears to indicate that calibration.

If user press simultaneously minus and plus, keys, sensor calibration is reset. logo disappears.

Important note: a large temperature deviation may indicate an inappropriate installation of the thermostat. If the temperature difference is too big, this could mean your thermostat was not installed properly e.g. in the right place.

Default value: **0,0°C** Range value : **-5,0°C** to **5,0°C**

Calibration of external room sensor (remote)

This menu is only displayed if parameter rEG (#20) is set with “Amb” or “Flr” or “Fll”.

Calibration must be done after a given order has been operating for a day. Place the thermometer in the middle of the room at about 1.5 m above the floor. Record the temperature shown after 1 hour. When you enter calibration mode, displaying of logo means no calibration has been performed yet. Enter the reading on your thermometer using minus and plus keys (step of 0.1°C).

The setting is validated with validation key. . logo appears to indicate that calibration.

If user press simultaneously minus and plus keys, sensor calibration is reset. logo disappears.

Important note: a large temperature deviation may indicate an inappropriate installation of the thermostat. If the temperature difference is too big, this could mean your thermostat was not installed properly e.g. in the right place.

When user changes this parameter, regulation will restart..

Default value: **0,0°C** Range value : **-5,0°C** to **5,0°C**

Open window detection

« **Yes** » : activation of function

« **no** » : no activation

If function is active, logo appears.

More information is in paragraph “Opened window detection”.

Default value: **Yes** Values: **Yes** / **no**

Operating mode of thermostat

- **Hot** : heating mode
- **CLd** : cooling mode
- **Aut** : automatic mode
- **Rev** : displaying of reversible menu (see paragraph 5.6 “Reversible mode”)

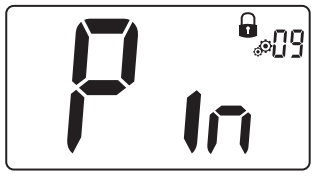
Default value: **Hot** Values: **Hot** / **Cold** / **Aut** / **Rev**

Authorization or not of cooling mode

This parameter menu allows to enable or disable cooling in specific room like bathroom.

When the system is in cooling mode, the thermostat is switched in Off mode.

Default value: **Yes** Other value: **no**



PIN code activation

« **Yes** » : activation of function

« **no** » : no activation

More information is in paragraph “PIN code & remote locking”.

Default value: **no** Other value: **Yes**

Setting value for PIN code

This menu is only displayed if parameter Pin (#09) is set with “Yes”.

User has to configure values of the three digits with and validate its choice with validation key ⊙.

Default value: **000** Range value : **000** to **999**

Degree unity for displaying

- **°C** : Celsius
- **°F** : Fahrenheit

Default value: **°C** Values: **°C** / **°F**

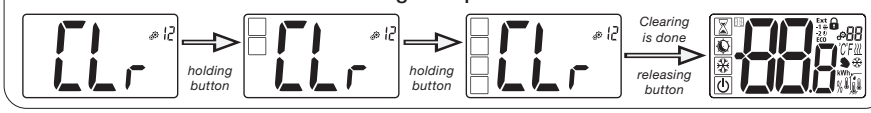
Reset user settings

Press and hold ⊙ key for 5 seconds to reset, all segments light up, showing that the thermostat has been reset with the factory default setting:

- Set point temperatures in modes.
- All user parameters with their factory values.

When button is hold:

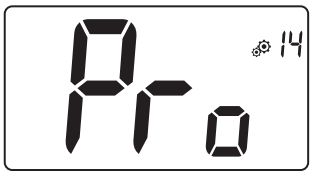
Clearing user parameters



Displaying client software version

Pressing and maintaining validation key ⊙ displays software qualification version and debug information.

Reminder: software version is written: Vxx.xx

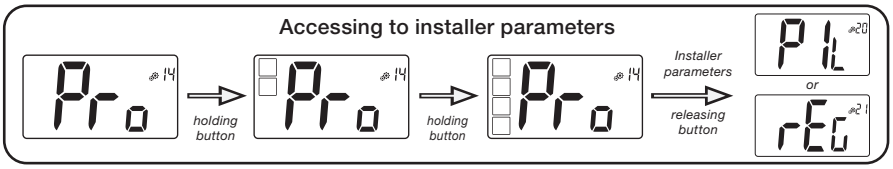


Installer menu

This menu permits to access to installer parameter menus.

Pressing and maintaining validation key ⊙ displays first parameter of installer menus.

When validation/menu key ⊙ is hold:



User menu exit

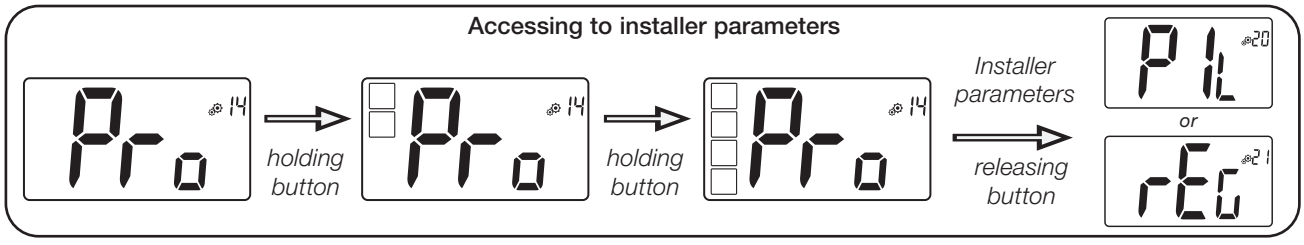
Press validation key ⊙ to exit user menu and return to the main screen.

8. Installer parameters

Modification of these parameters is reserved for professionals.

To access to these installer parameters, installer has to go to user parameter number 14.

After, he presses and holds validation/menu key ⊙ during 5 seconds:



Wired pilote configuration

Using H&C or clock signal, thermostat has to be defined in slave or master configuration.

- « **SLA** » : slave configuration - « **MAS** » : master configuration

Default value: **SLA** Other value: **MAS**

Selecting temperature sensor used for the regulation

- **AIR** : regulation with internal sensor
- **Amb** : regulation with external sensor
- **FLR** : regulation on floor sensor (external sensor of remote)
- **FLL** : regulation with floor sensor and air sensor

To select “Amb”, “FLR” or “FLL” regulations, external sensor has to be connected to thermostat. (see paragraph 9 “Temperature sensors used for regulation” for more information).

Default value: **Air** Other values: **Amb** / **FLL** / **FLR**

Displaying of **measured temperature by internal sensor**

If “Err” is displayed, internal sensor is damaged.

Displaying of **measured temperature by external sensor**

- **FLOOR** temperature / **AMBIENT** temperature

If “Err” is displayed, external/ambient sensor isn’t connected or damaged

Lower limit of floor temperature (FL.L)

This value is displayed and set only if parameter 21 is FLL.

This value of “low limit” will be used in heating and cooling configurations.

Press ⋀ to increase the value.

Default value: « **no** » : not activated

Other values: **5°C** to « **FL.H** » (**or 40°C**)

High limitation of floor temperature (FL.H)

This value is displayed and set when parameter 21 is set on FL.L. This value of “high limit” will be used in heating and cooling configurations.

Press ⋁ to decrease the value.

Default value: « **no** » : not activated

Other values: « **FL.Lo** » (**or 5°C**) to **40°C**

Regulation type

- **HYs** : regulation of hysteresis
- **bP** : regulation of proportional type

Default value: **bP** Other value: **HYs**

Hysteresis value

This menu is displayed only if parameter “Typ” (#26) is equal to “HYs”.

Use minus ⋁ and plus ⋀ keys to set hysteresis value.

The setting is validated with validation key ⊙.

Default value: **0,3°C** Value range: **0,2°C** to **3°C**

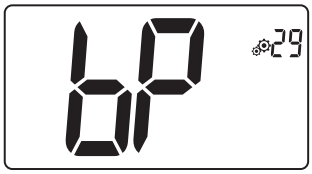
Cycle time setting

This menu is displayed only if parameter “Typ” (#26) is equal to “bp”.

Use minus ⋁ and plus ⋀ keys to set cycle time value.

The setting is validated with validation key ⊙.

Default value: **10 minutes** Other values: [**10 15 30 45 60**]



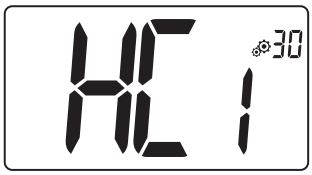
Proportional Band

This menu is displayed only if parameter “Typ” (#26) is equal to “bp”.

Use minus ⋁ and plus ⋀ keys to set proportional band value.

The setting is validated with validation key ⊙.

Default value: **2°C** Value range: **2°C** to **5°C**



First parameter of H&C signal: width of death band

This menu is displayed only if parameter “Mod” (#07) is equal to “Aut” or “Aut” is selected in “Reversible” mode menu..

This parameter corresponds to **width of death band**.

Use minus ⋁ and plus ⋀ keys to set value.

The setting is validated with validation key ⊙.

Default value: **1°C** Value range: **0°C** to **5°C** by step of **0,5°C**

Second parameter of H&C signal: time threshold

This menu is displayed only if parameter “Mod” (#07) is equal to “Aut” or “Aut” is selected in “Reversible” mode menu.

This parameter corresponds to a **time threshold**.

Use minus ⋁ and plus ⋀ keys to set value. The setting is validated with validation key ⊙.

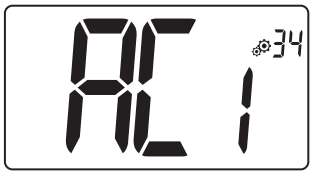
Default value: **1H** Other values: **no**, **30 minutes**, **2H**, **3H**, **4H** and **5H**

Minimum value of setting range of the set point temperature

Default value: **5,0°C** Value range: **5,0°C** to **15,0°C**

Maximum value of setting range of the set point temperature

Default value: **30,0°C** Value range: **20,0°C** to **37,0°C**

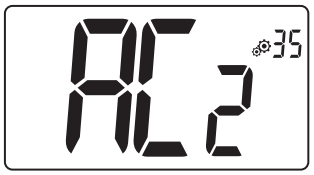


Anti-short Cycle time ON

Setting time value of minimum ON-state load.

Time value is a number of minutes.

Default value: **2 minutes** Other value: **no** to **5 minutes**



Anti-short Cycle time OFF

Setting time value of minimum OFF-state load.

Time value is a number of minutes.

Default value: **2 minutes** Other value: **no** to **5 minutes**

Actuator model: only with WATTS thermostat

Setting actuator model:

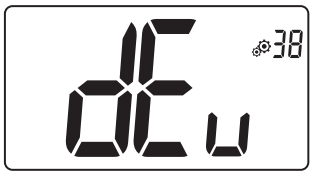
- « **no** »: normally open
- « **nc** »: normally close

Default value: **nc** Other value: **no**

Pump and valve exercises

Activation or not of system exercise function.

Default value: **Yes** Other value: **no**



Anti-condensation function of the installation: only with RH sensor

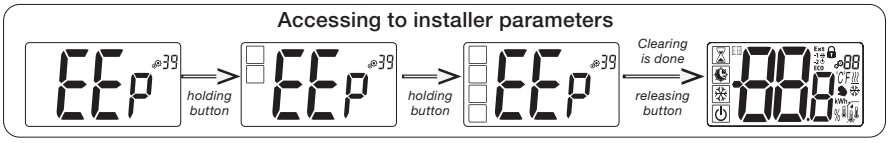
When condensation is detected, air conditioning is stopped or/and dehumidifier is activated.

Default value: **Yes** Other value: **no**

EEPROM clearing

All thermostat parameters will be loaded with factory settings.

Pressing and maintaining validation key ⊙ displays:



Installer menu exit

Press validation key ⊙ to exit user menu and return to the main screen.

9. Temperature sensors used for regulation

9.1 Temperature sensors

Thermostat can measure temperature from two different sensors:

- Internal sensor: this sensor is embedded on thermostat.
- External sensor: This sensor is plugged at the back of thermostat. It can be used as “ambient” temperature sensor or as floor temperature sensor depending of regulation configuration.

9.2 Description of regulation configurations

Heating and cooling regulation can use two different temperature sensor.

With respect of external sensor connection, installer can choose a regulation type in parameter 20 in installer menu (see paragraph 8 “Installer parameters”).

Regulation configuration	Sensor	LCD displaying	Description
AIR	Internal		Air regulation is done with internal sensor. Sensor measures temperature at the thermostat position.
Amb	External		Ambient regulation is done with external sensor. Sensor measures at a different position than thermostat position.
FLR	External		Floor regulation is done with external sensor. External sensor is connected to digital thermostat and placed “in the floor”.
FLL	Internal and external		Floor limit regulation with external sensor and internal sensors. External sensor is connected to digital thermostat and placed “in the floor”. This measurement permits to check floor temperature limits. Internal sensor is used to do temperature regulation.

Important points:

- to be able to select “Amb”, “FLR” or “FLL” regulations in installer menu, external sensor has to be connected to thermostat.
- If there is an error with external sensor and if installer/user goes to parameter menu #21, “AIR” regulation will be selected automatically and external sensor error could be deleted if thermostat is turned off.

10. Troubleshooting & solutions

Remote errors are:

- Error of temperature measurement:
    - Internal sensor;
    - External sensor: if this sensor is broken, remote carries on to work with internal sensor.
- Error of humidity measurement.
- H&C signal problem.

Internal temperature sensor error		**User wake up thermostat:** - Displaying of “Err” and - Red LED blinking **Thermostat’s standby if no external sensor:** - Displaying of “Err” and - Red LED blinking **Thermostat’s standby if external sensor:** - Displaying of external temperature and
External temperature sensor error		**User wake up thermostat:** - Icon blinking - Red LED blinking and internal sensor temperature is displayed **Thermostat’s standby:** - Internal sensor temperature is displayed - Icon blinking
Internal humidity sensor error		**User wake up thermostat:** - Icon blinking - Displaying “Err” if user wants to read humidity value
Heating & cooling signal error		LED blinking in orange during 2 seconds when stand-by screen is displayed (see paragraph 6.5 “H&C indication with LED”). Only in debug mode
		**User wake up thermostat:** LED blinking in red if signal on H&C line isn’t correct after 90 seconds. **Thermostat’s standby:** LED blinking in red only in debug mode.

11. Maintenance

Cleaning of the thermostat

Gently dust the outside of the thermostat with a soft, lint-free cloth.

If the thermostat needs a more thorough cleaning:

- Lightly dampen a soft and clean cloth with water.
- Wring out any excess water from the cloth.
- Gently wipe the display and sides of the thermostat, making sure no drops of water accumulate around the product.

Important: Do not spray thermostat directly with water, or use cleaning solutions or polishes, as doing so may damage the thermostat.

12. Technical characteristics

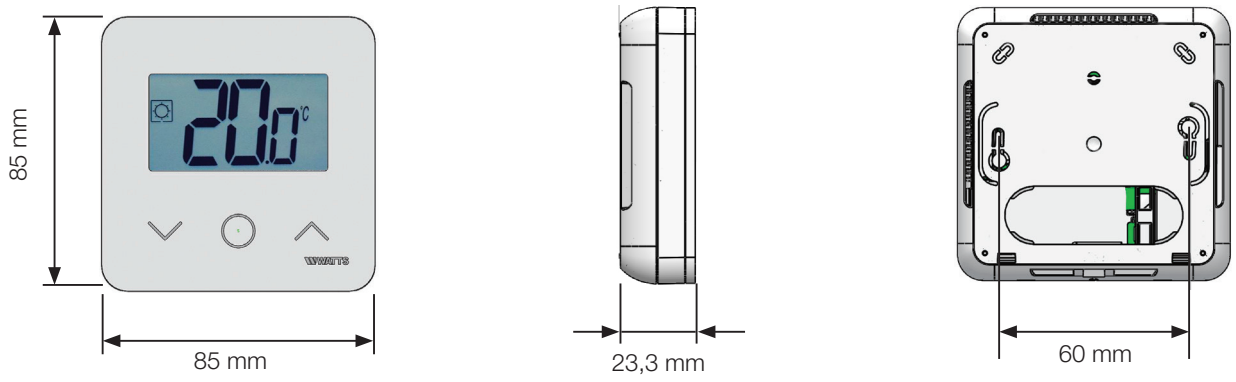
This thermostat can be used in conditions described below:

Environment: **Operating temperature** **Shipping and storage temperature**	 0°C to 40°C -10°C to +50°C
IP rating **Protection class** **ErP Class**	IP30 Class II Level IV (2%)
Temperature accuracy	0.1°C
Temperature ranges **Comfort / Reduced** **Anti-freeze**	 5°C to 30°C (0,5°C step) 0,5°C to 10,0°C (0,5°C step)
Regulation type	Proportional band (cycles 10 - 15 - 30 - 45 - 60 min) or Hysteresis 0.2°C to 3.0°C
Output voltage	From 24 to 230VAC 50Hz
Output power	NO or NC live contact 24VAC: Max. 5 electrothermal actuators (1.6W / actuator) 230VAC: Max. 8 electrothermal actuators (1.8W / actuator) Peak current: 4A max
Sensors	Internal and / or external (opt.) NTC 10kΩ at 25°C
Standards	2014/35/EU, 2014/30/EU, 2014/53/EU, 2011/65/EU, 2012/19/EU, 2015/1188/EU

13. Standards

Designation	Website link
Directive 2014/35/EU Low Voltage Directive	2014/35/UE
Directive 2014/30/EU Electromagnetic compatibility	2014/30/UE
Directive 2014/53/EU Radio equipment	2014/53/EU
Directive 2011/65/EU Hazardous substances in electrical and electronic equipment	2011/65/EU
Directive 2012/19/EU Waste electrical and electronic equipment	2012/19/EU
Regulation 2015/1188/UE Ecodesign requirements for local space heaters	2015/1188/EU

14. Dimensions & weight



Weight: 115g (thermostat only) - all including box 220g

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