GB

BT-DPRF-02   ((°))

⚠ IMPORTANT!

Before starting work the installer should carefully read this Installation & Operation Manual, and make sure all instructions contained therein are understood and observed.
- The thermostat should be mounted, operated and maintained by specially trained personnel only. Personnel in the course of training are only allowed to handle the product under the supervision of an experienced fitter. Subject to observation of the above terms, the manufacture 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 controller. Any other application shall not comply with the regulations. The manufacturer shall not be liable in case of incompetent use of the control. Any modifications and amendments are not allowed for safety reasons.
The maintenance may be performed by service shops approved by the manufacturer only.
- The functionality of the controller depends on the model and equipment. This installation leaflet is part of the product and has to be obtained.

APPLICATION

- The thermostats range "BT-DPRF-02" has been developed to control and manage all type of Electrical heating system or materials.
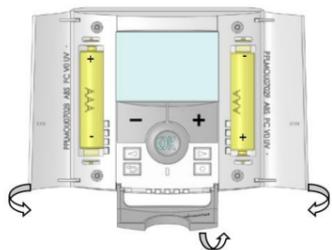- The controllers have been designed for use in residential rooms and industrial facilities.
Verify that the installation complies with existing regulations before operation to ensure proper use of the installation.

💡 Please find the Watts Vision system configuration documentation on: http://www.wattselectronics.com

1.   Presentation

Electronic programmable thermostat with LCD display specially designed to control different type of heating systems.
It will be your best partner to optimize your energy consumption and increase your comfort.

- Modern design with soft touch material
- Wireless Bidirectional communication 868 MHz
- "Easy program creation" function
- Weekly programmable by step of 30min
- Temporary override function
- Holiday or Reception function
- EEPROM nonvolatile memory
- 2 AAA batteries
- 2 parameter menus (User and Installer)
- Humidity measurement (*)

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

1.1.   Keyboard

Minus Key **(-)**   Plus Key **(+)**
Validation Key **(OK)**   Status LED
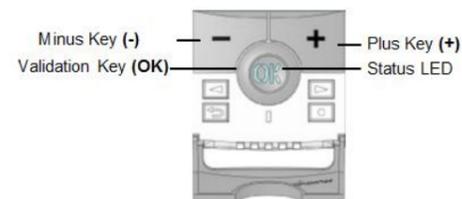
🔲 Left Navigation key (◄)
🔲 Right navigation key (►)
🔲 Escape key (⮌)
🔲 Edition key (●)

1.2.   LED & Display

LED Color when backlight is lit up:
Red Fix: Heating demand (**)
Green Fix: Cooling demand (**)
Green flash: validation is required
Red flash: Error on sensor or batteries
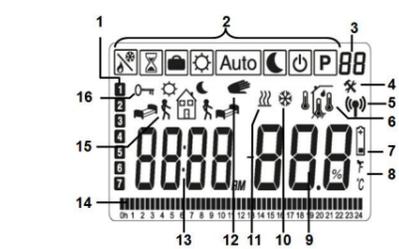
1:   Current day of the week (1=Monday,...)
2:   Operating mode menu (active mode is framed).
3:   Program number or parameter number if "**4**" is displayed.
4:   Installation Parameter menu.
5:   RF transmission logo.
6:   Type of sensor used and temperature displayed.

🏠 Regulation => Internal sensor.

Regulation => Floor sensor. (Only available with receiver)

Regulation => Internal sensor with Floor limitation.(Only available with receiver)

Regulation => outside temperature measured by external sensor (connected on the back of thermostat)

Humidity value

7:   Low batteries indicator
8:   °C or °F unit indicator
9:   Setting or measured temperature if "**6**" is displayed. Parameter value if "**4**" is displayed.
10: Cooling demand indication (**)
11: Heating demand indication (**)
12: Temporary override function activated
13: Time or parameter title if "**4**" is displayed
14: Program of the current day (the current time bar blinks)
15: Pictogram for program creation, program state in normal operating mode.
16: Key lock indicator.

2.   First Installation

This section will guide you to set up your thermostat for the first time.

2.1.   Batteries installation
- Open the two side's covers and Insert the 2 AAA Alkaline supplied batteries (or remove the small protection sticker if the batteries are already installed in the compartment)
- Close the two side's covers
- Now your thermostat will propose you to adjust the current time and date

2.2.   Time and Date adjustment
Each time a value blinks, you can adjust it with the (-) and (+) keys, once the value is chosen, validate it with the **(OK)** key. The thermostat will jump automatically to the next value.
Remark: you can always come back to the previous value by pressing the escape key (⮌).
List order of the time and date adjustments:

Time and day:
Adjustment of the hours,
Adjustment of the minutes
Adjustment of the day (1 = Monday)
Date:
Adjustment of the day number
Adjustment of the month number (01 to 12)
Adjustment of the year
Then the message "**Save**" and blinking green LED appears, press **(OK)** to validate the adjusted time and date.
You can always reach the time and date adjustments, by pressing and maintaining the edition (●) key during 2 seconds in normal operating modes.
Remark: when a central (BT-CT02) is linked to your installation, thermostat will use the Time set in the Central

2.3.   RF installation
Please have a look at the list of all receivers compatible with this thermostat in Technical Characteristics section.

2.3.1. With receivers
- First of all to configure your thermostat with the receiver, you must put your receiver in « **RF init** » mode (refer to the receiver leaflet, only the RF receiver of the same range are compatibles).
- Now on the thermostat press and maintain the edition key (●) during 5s, then the parameter « **RF ini** » must be display.

The thermostat will send now the radio configuration signal to the receiver.
- After few seconds the thermostat and receiver should exit by their self the **RF init** mode, this is the normal procedure to confirm a correct pairing.
- Now you can check the RF distance, go to the room which must be regulated. Put your thermostat on the final position (On the wall or table...), then put the thermostat in Comfort mode (setting temperature above 37°C). Close the door and go to the receiver to check if the new status of the thermostat has received.
- Now return to the thermostat and switch off it. Check on the receiver again if it's also switched off.

If the RF signals were received correctly, adjust your setting temperature as you want.
If the RF signals weren't received correctly, check the installation (Receiver position, distance...) or restart the **RF init** rules to be sure.

Remark: To make the installation easier, it will be better to have the thermostat near to the receiver during the configuration mode. (A minimal distance of 1 meter must be respected)

2.3.2. Case of Central (BT-CT02)

Procedure is the same as in 2.3.1 but link is done with central (BT-CT02). At this moment, Central creates a new zone.

2.4.   Starting
The thermostat is now ready to work. The default working mode is Manual Comfort

💡 At any time, when the backlight is extinct, press the **(OK)** key to lit-up the backlight.

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3.   Working mode definition

Your thermostat has several different working modes to allow you to adjust your unit according to your life habitudes.

To change the working mode, open the small center cover to have access to the navigation keys (◄) or (►). Move the frame cursor on the desired working mode and press **(OK)** to enter in the operating mode you have chosen.
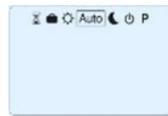
3.1.   Manual mode Confort ☼
Manual working mode, the comfort setting temperature will be followed all the time.
By pressing (-) or (+) keys, the comfort setting temperature starts to blink and can be adjusted.

3.2.   Manual mode ECO 🌙
Manual working mode, the reduced setting temperature will be followed all the time.
By pressing (-) or (+) keys, the reduced setting temperature starts to blink and can be adjusted.
Remark: In cooling mode, Reduced mode acts like the OFF mode (system is stopped)

3.3.   OFF mode ⏻
Use this mode if you need to switch off your installation.
Be Careful: In this mode your installation can freeze.

💡 At any time, when display is off, press on the **(Ok)** key to display a few seconds the current temperature and time.
**Remark:** To restart your installation, use the navigation keys (◄) or (►).

3.4.   Automatic mode Auto
In this mode the thermostat will follow the chosen program (Built-in or customized) according to the actual time and the Comfort and Reduced setting temperatures.

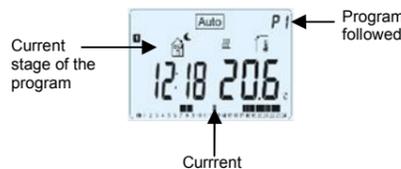By default, mode automatic Auto follows the standard built-in program "P1":
Monday to Friday

☼ 21°C
🌙 19°C
          07:00   09:00   17:00   23:00
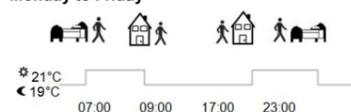
Saturday and Sunday

☼ 21°C
🌙 19°C
          08:00   23:00

Note:
You can customise your program. See the next part "**Working mode definition**" chapter "**Program**" for more explanation.

Current stage of the program →
Program followed →
12:18 20.6
Currrent

You can easily override temporarily the current program by pressing (-) or (+). The thermostat jumps to Timer mode in which you select a setpoint and a time. The thermostat returns automatically to the Automatic mode at the end of the time.

3.5.   Program mode P
Current day →
Program of the day →
Program followed →
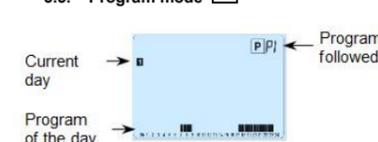
When you enter in the Program mode, the first operation is to choose the program number with (-) or (+) keys.
You can choose between a built-in program P1 to P9 or a user program U1 to U4.
If you chose a Built-in program P1 to P9,
You can only see and chose the program.
P1:   Morning, Evening & Weekend
P2:   Morning, Midday, Evening & Weekend
P3:   Day & Weekend
P4:   Evening & Weekend
P5:   Morning, Evening (Bathroom)
P6:   Morning, afternoon & Weekend
P7:   7H – 19H (Office)
P8:   8H – 19H & Saturday (Shop)
P9:   Weekend (Secondary house)

- Use the navigation keys (◄) or (►) to view other days of the program.

- Press the **(OK)** key to confirm your choice and come back to the main screen (in AUTO mode)
If you chose a user program U1 to U4, you can also customise it.
Default setting:
U1, U2, U3, U4 = ECO all week
- Press on the edition key (●)to customise a user program.

Symbols and explanation for program creation:

☼ 🛏👫   First step of the day (☼ Comfort temp.)
          The wakeup hour need to be adjusted.

🌙 🏠🚶   Middle step of the day (🌙 Reduced temp.)
          The leaving hour need to be adjusted

☼ 🏠🚶   Middle step of the day (☼ Comfort temp.)
          The comeback hour will need to be adjusted

🌙 🛏🚶   Last step of the day (🌙 Reduced temp.)
          The sleeping hour need to be adjusted

- The program step is 30 minutes
- Each time a value or icon blinks you are invited to make a choice with (-) or (+) keys, once the choice is made press the **(OK)** key to jump to the following step.
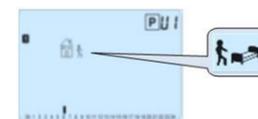- The program creation will always start with the day **1** (Monday).

Once you have pressed the (●) key, the following display will appear:

0000

Now you are invited to adjust the hour of the first step of the program with (-) or (+),

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0600

Press **(OK)** to validate and go to the following step.

Now you are invited to choose the type of the next step of the program (blinking icons). Two choices will be possible:
- 1st choice is to choose the sleep icon. (End of the day)
- 2nd choice is to choose the leaving icon, to add one step to the program during the day.
When the choice is made, press **(OK)** to validate. Then you can adjust the step hour with (-) or (+),

0730

When step hour is set press **(OK)** to jump to the next step.

0730

You will be directly invited to adjust with (-) or (+) the hour of the comeback step.

1200

Press **(OK)** to validate and go to the following step.

You are again invited to choose the type of the next step of the program (blinking icons), two choices will be possible:
- 1st choice is to choose the sleep icons. (End of the day)
- 2nd choice is to choose the leaving icons, to add another step to the program during the day.
When the choice is made, press **(OK)** to valid and you can adjust the hour of this step with (-) or (+),

1200   **2300**
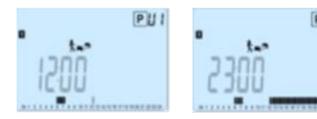
Press **(OK)** to validate and finish the edition of the first day.
Now you can choose to copy the program day just created to subsequent days

COPY YES ⇒ **COPY no**
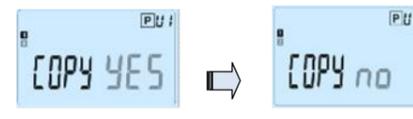
Change the choice "**Yes**" or "**no**" with (-) or (+) and validate your choice with (OK).

- If you select "**no**", you will be invited to create a program for Tuesday (repeat the previous method to build it.)

- If you select "**Yes**", you will have the possibility to copy the program to the following day (on Tuesday on Wednesday... up to the last day of the week (7=Sunday).
When you press **(OK)** on the last day (7=Sunday) you will be invited to "**SAVE**" your program.

Then the message "**Save**" and blinking green LED appears:

SAVE

Press **(OK)** key to save your program and return to **AUTO** operating mode following your user program.
Press the escape key (⮌)to erase your user program changes and come back to operating mode.

Remark: when a central is linked to your installation, program is done on the Central.

3.6.   Holiday mode 🧳

The Holiday mode allows you to set the anti-freeze temperature for a selected number of days

You can adjust, the duration in day "**d**" with (-) or (+), press **(OK)** to start (Adjustable 1 to 44 days).

The anti-freeze setting temperature is fixed and can be adjusted in the parameter menu number **06 'HG'**, refer to chapter 5.

The 🧳 logo will blink and the number of days left is displayed until the end of the period.

💡 If you want to stop the Holiday function before the end, set the duration period to "**no**" with (-) key.

Remarks:
- In cooling mode, this mode acts like an OFF mode
- When a central is linked to your installation, this mode is permanent (or set directly via the Central BT-CT02)

3.7.   Timer mode ⏲

The Timer mode allows you to adjust, the temperature for a special time. After this time, thermostat will go to older current mode.
- You can first adjust, the duration in hours "H" if below 24H, then in day "**d**" with (-) or (+), press **(OK)** to validate. (Adjustable 1 Hour to 44 days)

- In a second time, you can adjust the desired setting temperature with (-) or (+), press (OK) to start the function. (Default value 24°C)

The ⏱ logo will blink and the number of hours /days left is displayed until the end of the period.

💡 If you want to stop the Timer function before the end, set the duration period to "no" with (-) key or use the navigation keys (◄) or (►).

3.8. Reversible mode ❄️

The reversible mode allows you to choose the working mode for your installation.
By pressing on (-) or (+) keys, the selected working mode blinks and can be modified. The user can then choose:
- Hot : the installation operates in heating mode (winter)
- CLd : the installation operates in cooling mode (summer).
Warning: this menu is available if user activates parameter 21 in Installer's advanced Menu (refer to chapter 8)
During this selection, the status LED will be red color if heating is selected or green color if cooling is selected.
By pressing (OK) key, you validate your selection. By pressing (◄) or (►) key or the (↩) key, you come back to the current working mode of the thermostat.
Remarks:
- This menu is only available if the parameter "21" has been set to "REv" (refer to chapter 8)
- This mode is not available if thermostat is linked with a central (BT-CT02).

4. Special functions

4.1. Key lock

Use this function to prevent all change of your settings (In a child room, public area…)

- To activate the Key lock function, first press maintain the escape key (↩) and then press simultaneously on the edition key (●).
- The " 0ㅁ " logo will be displayed on the screen.
Repeat the same procedure to unlock the key board.

4.2. Open window function

This function is able to stop heating if thermostat detects an unusual decrease of temperature (open window).
Principle:
If the displayed temperature (internal or ambient sensor) decreases by 3°C or more during a 5 minutes period (or less), the thermostat stops heating for 15 minutes. If the temperature continues decreasing, it continues to stop.
During this stop, the room temperature will blink.
Return to normal mode:
The thermostat returns automatically to normal mode after the stop period.
The function can be overridden by pressing the (OK) button during the stop heating phase.
The blinking temperature should stop to indicate the end of the detection.
Special cases:
- This function doesn't work if thermostat is in Floor regulation
- This function doesn't work if thermostat is in OFF or Antifreeze Mode
- If temperature is less than 10°C, thermostat will regulates at 10°C during the stop phase (refer to chapter 5, parameter 06)
- This function doesn't work in Cooling mode

4.3. Humidity measurement (*)

Thermostats measure the humidity in the air. This measure allows:
- To regulate the humidity in the air (refer to parameter 34 in chapter 8)
- To protect your system against condensation (refer to parameter 35 in chapter 8)

4.4. Visualization

With this function, you can quickly view the current temperatures of the different sensors connected on your thermostat (floor, remote, external). To do so, on the main screen, press several times on the escape key (↩). This "scroll function" is only available on the main screen:

You will see in the order of each press:
1/ the setting temperature followed by the thermostat
2/ the ambient temperature
3/ if the external sensor is connected: the outside temperature
4/ the humidity percentage (*)
Remarks :
- refer to chapter 1.2 for icon meanings
- If Parameter "Sen" is set on "Air" (refer to chapter 8), the remote sensor will be used as an external sensor.

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5. Parameter's menu

Your thermostat has a parameter's menu. To enter in this menu, press and maintain the edition key (●) during 5sec. Then parameter menu will appear and first parameter screen will be displayed

Now you can select a parameter which must be adjusted with the navigation keys (◄) or (►), once the parameter chosen, toggle the value with the (OK) key, modify it with (-) or (+) and confirm your adjustment with (OK).
To leave the parameter menu, choose the parameter « End » and press (OK) or Return key (↩)

N°	Default value & other possibilities
00	**RF INI: Radio configuration** Radio configuration mode for wireless communication (refer to chapter 2.2)
01	**dEG: Unit of the temperatures displayed** **°C** Celsius **°F** Fahrenheit
02	**:** Selection of the Time clock unit **24H** (24:00) **12H** (12:00 AM /PM)
03	**dst: Daylight Summer time change Summer<->Winter** **YES** automatic change according to date. **no** no daylight summer time automatic change.
04	**AirC: Calibration of the internal probe** The calibration must be done after 1 day working with the same setting temperature in accordance the following description: Put a thermometer in the room at 1.5M distance from the floor (like the thermostat) and check the real temperature in the room after 1 hour. When you enter on the calibration parameter "**no**" is displayed on the right to indicate no calibration has made. To enter the value shown on the thermometer, use the (-) or (+) keys to enter the real value. Then, press (Ok) to confirm. The message "**Yes**" should be displayed; the value will be stored in the internal memory. If you need to erase a calibration press on the escape key (↩). The old value will be erased and the message "**no**" will be displayed. *** Pay attention:** Only the heating element driven by the thermostat must be used during the complete step of the calibration.
05	**AMbC : Calibration of the external wired probe** Same calibration method as described in parameter "04 AirC" above.
06	**HG: Anti-freeze temperature** used in Holiday mode Default value 10°C. Use the (-) or (+) keys to change the anti-freeze setting temperature. Then press (Ok) to confirm.
07	**ITCS: YES, no** The Intelligent Temperature Control System will activate your installation in advance (2 hours maximum) to assure the desired temperature at the hour programmed following your weekly program. This automatic control system works in the following way: When you start your thermostat for the first time, it will measure the time taken by your installation to reach the set temperature. The thermostat will re-measure this time at each program change to compensate external temperature change & influence. You can now program your thermostat without the need to adjust the temperature in advance because your thermostat does it automatically for you.
08	**Clr ALL : Reset to Factory setting** Press and maintain (Ok) key during 5s to reset Set points temperatures and user parameters in this menu to factory default settings. User programs will also be resetted. **Pay attention:** Ensure you that you have all necessary elements to re-setup your installation before using this function.
09	Displayed only if the BT-DRF-02 is linked with a multizones receiver **CHAn—** --: number of the linked zone
10	Software version **VErS**
11	**End: Exit the parameter's menu** Press (OK) key to exit installation parameter menu and return to normal operation.

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6. Technical characteristics

Environmental: Operating temperature:	0°C - 40°C
Shipping and storage temperature:	-10°C to +50°C
Electrical Protection Installation Category Pollution Degree	IP30 Class II 2
Temperature precision	0.1°C
Setting temperature range Comfort, Reduced Holiday (Antifreeze) Timer	0,5°C step 5°C to 37°C 0,5°C to 10,0°C 5°C to 37°C
Regulation characteristics	Proportional Band (PWM 2°C/10min) or Hysteresis 0.5°C
Power Supply Operating life	2 AAA LR03 1.5V Alkaline ~2 years
Sensing elements: Internal & External (option)	Internal: NTC 10kΩ at 25°C External: NTC 10kΩ at 25°C (ß = 3950)
Radio Frequency	868 MHz, <10mW.
Software version	Showed in parameter menu. Vers xxx
Compatible receivers	BT-M6Z02 RF BT-FR02RF BT-WR02RF / BT-WR02HC BT-PR02RF Other receivers can be compatible : check on the instruction manual of your receiver
CE Directives Your product has been designed in conformity with the European Directives.	R&TTE 1999/5/EC EMC 004/108/EC RoHS 2011/65/EU
Product conformed to : Classification : Contribution :	UE 811/2013 and 2010/30/UE IV (2%)

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7. Troubleshooting & Solution

My BT DRF-02 doesn't start	
Batteries Problem	- Check if the protection sticker on the batteries is removed. - Check the batteries orientation. - Check the capacity of the batteries

My BT DRF-02 Led, blinks in Red	
Problem on sensors	🌡 The logo blinks (air sensor) - Contact your installer or seller. 🌡 The logo blinks (Floor sensor) - Check the connection of the sensor. - Disconnect the sensor, and check it with an ohmmeter (the value must be around 10kohms)
Batteries level is too less	🔋 The logo blinks (Batteries) - Replace the batteries.
Humidity measurement problem (*)	The logo ⌐ blinks and the thermostat displays "Err" - Contact your intaller

My BT DRF-02 seems work correctly but the heating or the cooling don't work correctly	
Output	On the receiver: - Check the good reception of RF signal - Check the connections. - Check the power supply of the heating element. - Contact your installer.
RF communication	- Check the following points : - The receiver must be put at a minimum distance of 50cm of all others electrical or wireless materials (GSM, Wi-Fi..) - The receiver shouldn't be fixed on a metallic part or too close of hydraulic pipes… (Copper…)
Configuration	❄️ The logo blinks : - Cooling request is made by the central (BT-CT02) but the thermostat doesn't allow (refer to parameter 21 chapter 8).
Humidity protection (*)	💧 The logo blinks: - humidity regulation is activated (refer to parameter 34 in chapter 8) - condensation is detected (refer to parameter 35 in chapter 8)

My BT DRF-02 seems work correctly but the temperature in the room was never in accordance with the setting temperature.	
Program	- Try to calibrate your thermostat (refer to user menu parameter 04) - Contact your installer, to check & adjust the regulation parameters with your heating system.

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8. Advanced installer's parameter menu

In order to enter in this menu, press on the escape key ↩ during 5 seconds

The display with the first parameter appears (« rEGU »).
- Once you entered in the menu, go to the parameter which you want change by using the keys (◄) or (►).
- Use the keys (+) or (-) to edit and modify and confirm by pushing the (OK) key.
- To leave the parameter menu, go to the parameter "End" and press the (OK) key.

Parameters		Installer's Advanced Menu		
N°	**names**	**Description of the parameter**	**Factory value**	**Other possibility**
20	REGU	Selection of the sensor used for the regulation.	**"AIR"** Internal ambient sensor	**"amb"** External ambient sensor *Following option aren't available with all receivers* **"FLR"** Floor sensor regulation **"FL.L"** Air regulation with floor limitation possibilities (refer to parameters 25&26)
21	MOde	Working mode selection of the thermostat	**"Hot"** Heating mode	**"Cld"** Cooling mode **"rEv"** reversible menu activation **"Aut"** Automatic mode
21 (**)	Cld	Use this option if you want to allow the zone to work in cooling mode	**"yes"** Function activated	**"no"** Function deactivated
22	AirS	View of the measured values of the internal sensor.	**"__-_" °C/°F**	
23	AmbS	View of the measured values of the external (Ambient) sensor.	**"__-_"°C/°F**	
24	RecS	View of the measured values of the floor sensor connected to the receiver.	**"__-_"°C/°F**	
25	FL.Lo	Lower limit of the floor temperature.	**"no"** The lower limitation is not used	From 5°C to **"FL.Hi"**
26	FL.Hi	Upper limit of the floor temperature.	**"no"** The upper limitation is not used	From **"FL.Lo"** to 40°C
27	reg	Selection of regulation type.	**"bp"** Proportional band (PWM)	**"hys"** Hysteresis (On/Off)
28	UF1	Concrete choice.	**"uf1"** For liquid concrete with low thickness < 6cm	**"uf2"** For traditional concrete with thickness > 6cm
29	Bp1	Floor covering choice.	**"Bp1"** For tiling	**"Bp2"** For wood parquet (floating or not)
30	Uir	Pilot wire function for French Market application: Use this option if your installation has the pilot wire installed in combination with an energy saver.	**"yes"** Function activated	**"no"** Function deactivated
31	min	Minimal value of the setting range.	**5.0°C**	From 5°C to 15.0°C
32	MAX	Maximal value of the setting range.	**37.0°C**	From 20°C to 37.0°C
33	Uin	Automatic open window detection. *(Refer to chapter 4.2)*	**"yes"** Function activated	**"no"** Function deactivated
34(*)	rH	Percentage value of the humidity setting	**55%**	From 0% ("no") to 100%
35(*)	dEv	Anti-condensation function *(when condensation is detected, cooling system is stopped or/and dehumidifier is activated)*	**"yes"** Function activated	**"no"** Deactivated function
36	Clr EEp	All parameters will be reloaded with the factory value.	Press on the (OK) key during few seconds.	
37	End	To exit the installer's menu	Press on the (OK) to exit.	

(*): concerns version with humidity sensor
(**): concerns thermostat if it is linked with a central (BT-CT02) or with a BT-M6Z02 RF