



BT DP-01

USER GUIDE	GB
<i>Digital programmable Thermostat</i>	4-41
GUIDE D'UTILISATION	F
<i>Thermostat digital programmable</i>	42-87
Bedienungsanleitung	D
<i>Programmierbarer digitaler Funkthermostat</i>	88-130
GUÍA DE USUARIO	ES
<i>Termostato digital programable</i>	132-172
GUIA DO UTILIZADOR	PT
<i>Termostato programável digital</i>	174-215
HANDLEIDING	NL
<i>Digitale programmeerbare Thermostaat</i>	216-253



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 of the “BT” series are developed to control and manage all type of heating installations.*
 - *The controllers 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.*



SAFETY INSTRUCTIONS

Before starting work disconnect power supply!

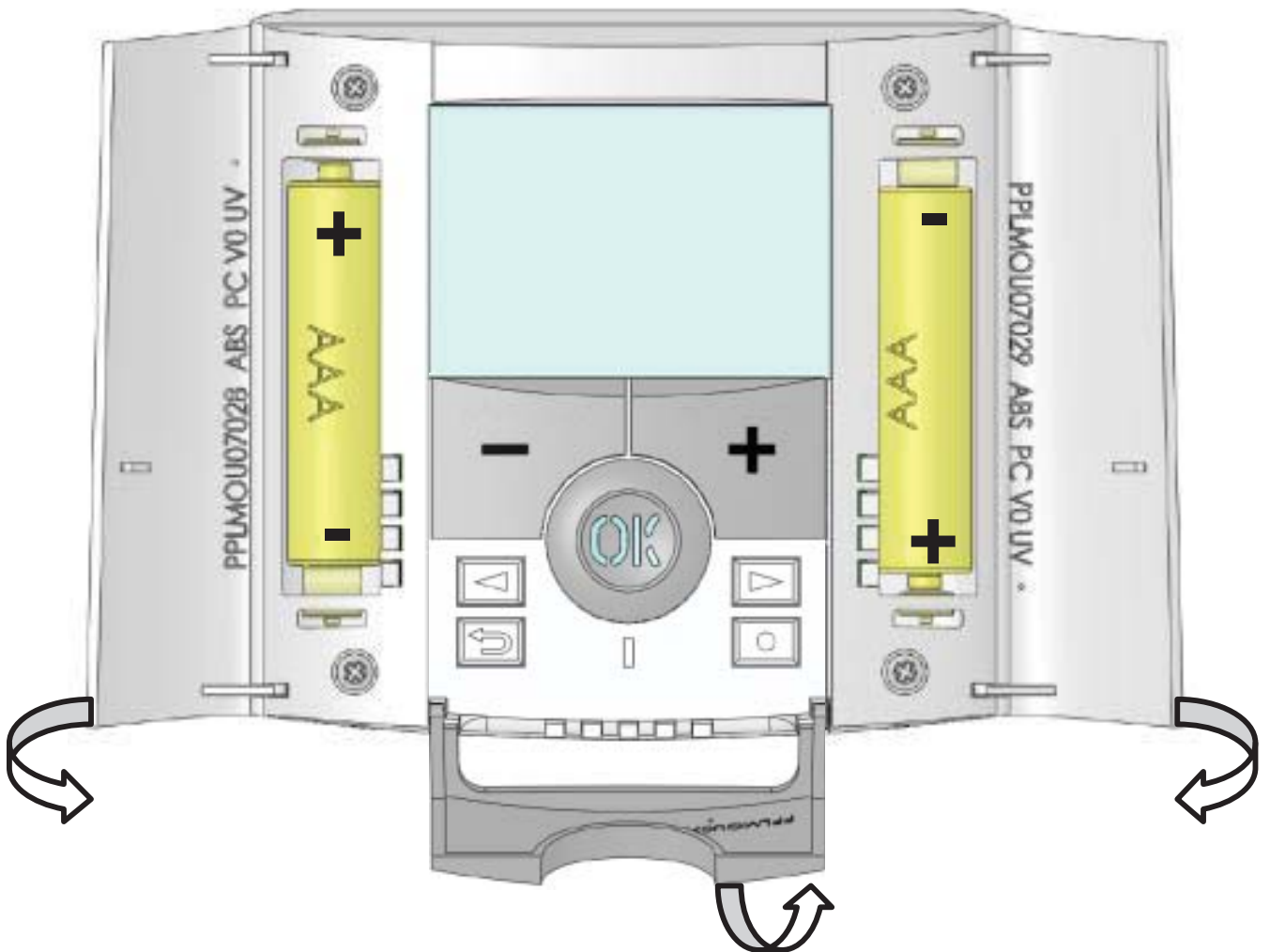
- *All installation and wiring work related to the thermostat must be carried out only when de-energized. The appliance should be connected and commissioned by qualified personnel only. Make sure to adhere to valid safety regulations.*
- *The thermostats are neither splash- nor drip-proof. Therefore, they must be mounted at a dry place.*
- *Do not interchange the connections of the sensors and the connections under any circumstances! Interchanging these relays connections may result in life endangering **electrical hazards** or the destruction of the appliance and the connected sensors and other appliances.*

Table of content

1	Presentation .Fehler! Textmarke nicht definiert.		
1.1	Keyboard....Fehler! Textmarke nicht definiert.		
1.2	Display & LEDFehler!	Textmarke	nicht definiert.
2	First Installation Fehler!	Textmarke	nicht definiert.
2.1	Batteries installationFehler!	Textmarke	nicht definiert.
2.2	Time and Date adjustmentFehler!	Textmarke	nicht definiert.
2.3	Starting.....Fehler! Textmarke nicht definiert.		
3	Working mode definition Fehler!	Textmarke	nicht definiert.
3.1	Manual mode Comfort Fehler!	Textmarke	nicht definiert.
3.2	Manual mode, Reduced Fehler!	Textmarke	nicht definiert.
3.3	OFF mode .Fehler! Textmarke nicht definiert.		
3.4	Automatic modeFehler!	Textmarke	nicht definiert.
3.5	Program mode Fehler!	Textmarke	nicht definiert.

- 3.6 Holiday mode **Fehler! Textmarke nicht definiert.**
- 3.7 Timer mode **Fehler! Textmarke nicht definiert.**
- 4 Special function** Fehler! Textmarke nicht definiert.
- 4.1 Keyboards lock Function **Fehler! Textmarke nicht definiert.**
- 4.2 Information . **Fehler! Textmarke nicht definiert.**
- 5 Parameter's menu** Fehler! Textmarke nicht definiert.
- 6 Technical characteristics** Fehler! Textmarke nicht definiert.
- 7 Troubleshooting & Solution** Fehler! Textmarke nicht definiert.

1 Presentation



Electronic programmable thermostat with LCD display specially designed to control different type of heating systems.

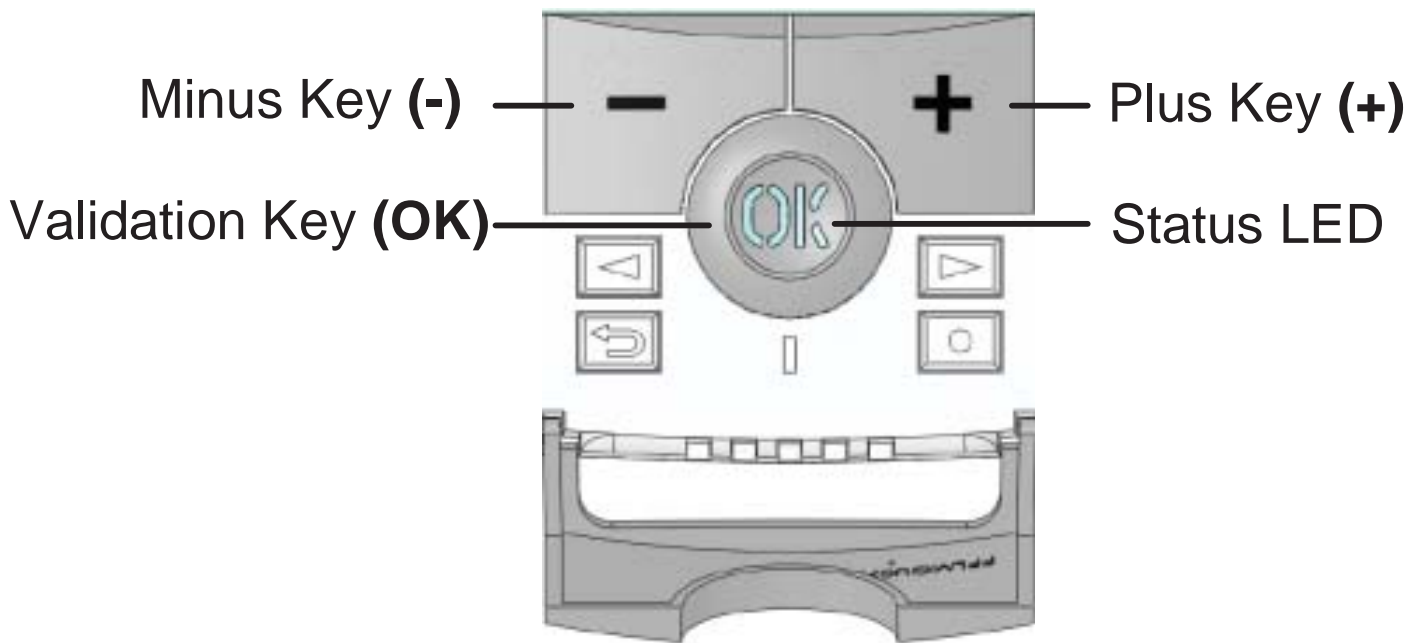
It will be your best partner to optimize your energy consumption and increase your comfort.





- Modern design with soft touch material.
- Wiring & Installation simplified.
- **“Easy program creation”** function.
- Weekly programmable by step of 30min.
- Temporary override function.
- Anti freeze function.
- Holiday or Reception function.
- EEPROM non volatile memory.
- 2 AAA batteries for 2 years operating life.
- 2 Wires output for a maximum possibility of use.
- 2 parameter menus, (User and Installer)

In option

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

1.1 Keyboard



-  Left Navigation key (◀)
-  Right navigation key (▶)
-  Escape key (↶)
-  Edition key (●)

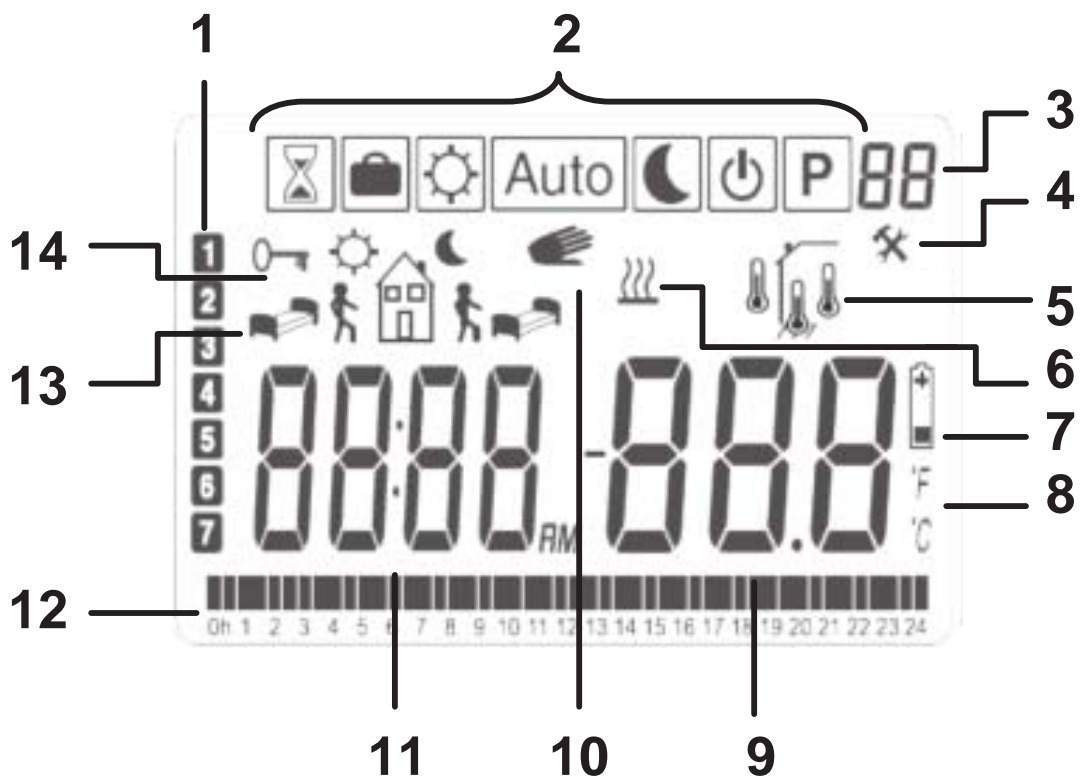
1.2 Display & LED



Red Fix (when backlight is lit up): Heating demand

Green flash: your validation is required

Red flash: Error on sensor or batteries



1. Current day of the week
2. Operating mode menu (active mode is framed).
3. Program number or parameter number if “4” is displayed.
4. Installation Parameter menu.
5. Type of sensor used and temperature displayed.



Regulation => Internal or external ambient sensor.



Regulation => Floor sensor.



Regulation => Internal sensor with Floor limitation.



View of the outside temperature

6. Heating demand indication.
7. Low batteries indicator.
8. °C or °F unit indicator
9. Setting or measured temperature if “5” is displayed. Parameter value if “4” is displayed.

- 10.** Temporary override function activated, or “ITCS” function if blinking.
- 11.** Time or parameter title if “4” is displayed.
- 12.** Program of the current day
(the current time bar blinks)
- 13.** Pictogram for program creation,
program state in normal operating mode.
- 14.** 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.

Note: 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 (Century)

Adjustment of the year

Then the message “**Save**” and blinking green LED appears, press (**OK**) to validate the adjusted time and date.

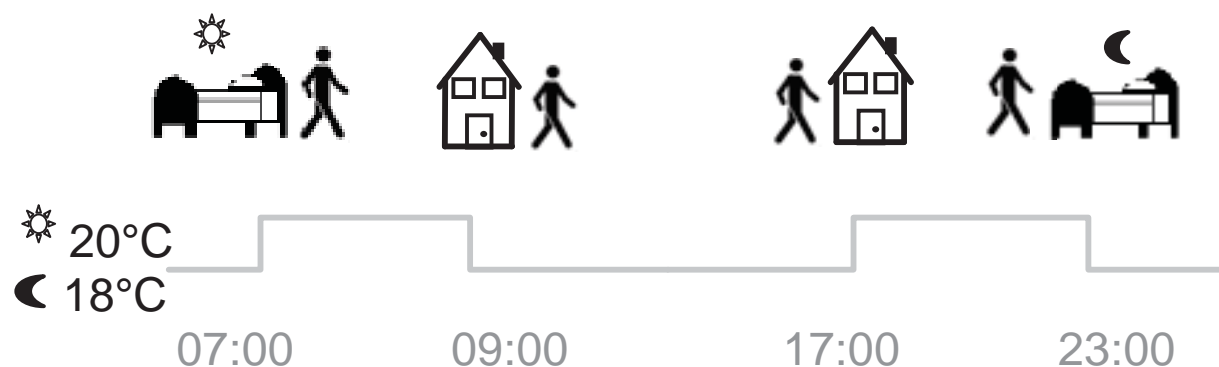
You can always reach the time and date adjustments, by pressing and maintaining the edition (●) key during 2 seconds in normal operating modes.

2.3 Starting

The thermostat is now ready to work.

The default working mode will be automatic Auto with a standard built-in program “P1”.

Monday to Friday

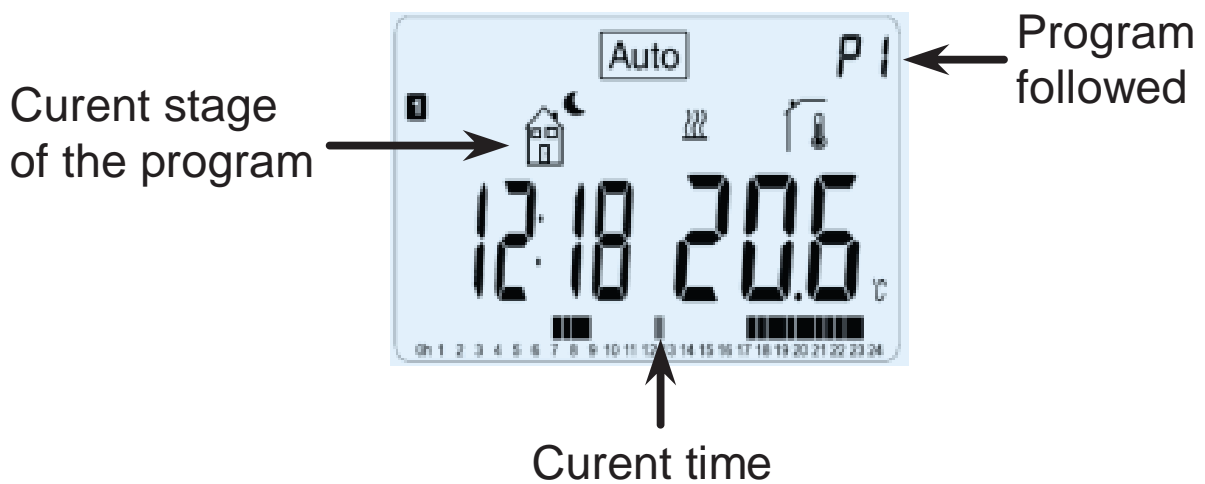


Saturday & Sunday



Note:

You can customise your program as you want, See the next part “**Working mode definition**” chapter “**Program**” for more explanation.



At any time, when the backlight is extinct, press the **(OK)** key to lit-up the backlight, and then press another time the **(OK)** key to show the current setting temperature

3 Working mode definition

How to change the working mode?

- Open the small center cover to have access to the navigation keys (◀) or (▶).

- You can now press these keys to display the working mode line.

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 Comfort

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, Reduced

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.

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.
- 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.

You can easily override, until next program step, the current program temperature by changing the value with **(-)** or **(+)**. Setting temperature will blink.

The small hand  logo will be displayed when override function is active.

If hand  logo blinks then ITCS is ongoing.

3.5 Program mode P



When you enter in the Program mode, the first operation is to chose 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)

(See the Annexe parts to view a complete description of the Built-in program)

- Use the navigation keys (◀) or (▶) to change the program day displayed.
- 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,



As above you can choose the program, see it, but you can also customise it.



Default setting:



U1, U2, U3, U4 = Comfort 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).

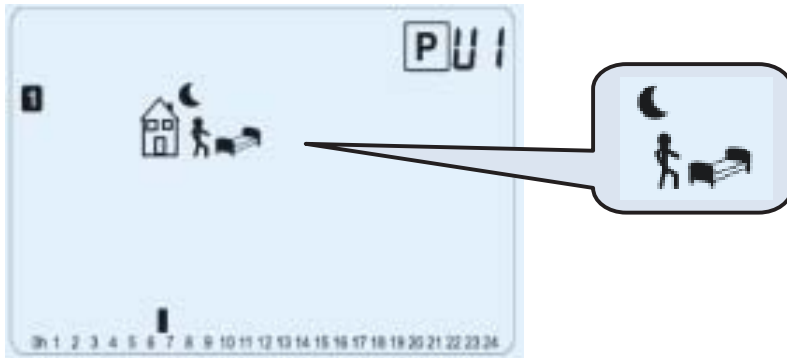
Once you have pressed the **(●)** key, the following display will appear:



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



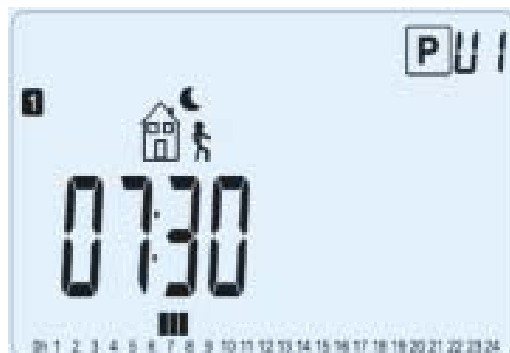
Press **(OK)** to validate and go to the following step.



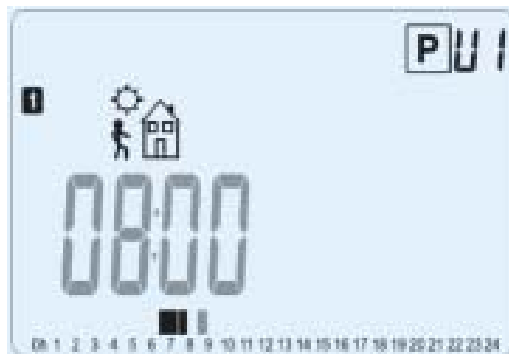
Now you are invited to choose the type of the next step of the program (blinking icons),
2 choices will be possible:

- 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 **(+)**,



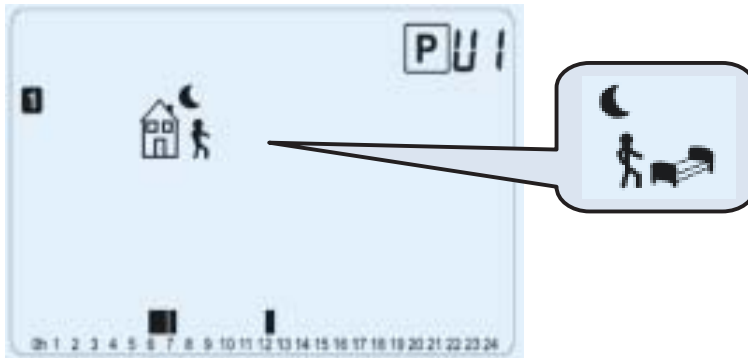
When step hour is set press **(OK)** to jump to the next step.



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



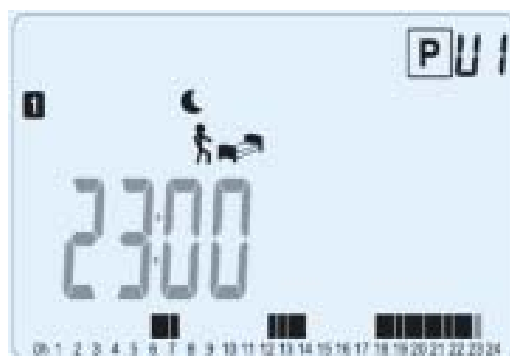
Press **(OK)** to validate and go to the following step.



You are again invited to choose the type of the next step of the program (blinking icons),
2 choices will be possible:

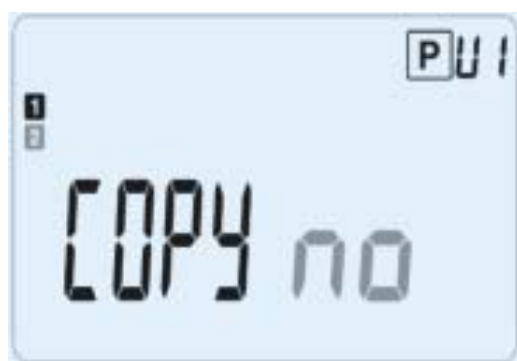
- 1st choice is to choose the sleep icons. (End of the day)
- 2nd choice is to choose the leaving icons, to add another step to the program during the day.

When the choice is made, press **(OK)** to valid and you can adjust the hour of this step with **(-)** or **(+)**,



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.



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 built 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:




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.

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 99 days)
- The anti-freeze setting temperature is fixed and can be adjusted in the parameter menu number 06 ‘HG’, see chapter 6. (Default value 10°C)

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.

3.7 Timer mode



The Timer mode allows you to adjust, the temperature and the duration for a special time. This function can be used when you stay at home for several days, or if you want to override the program for some time (reception...)

- 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 99 days)
- In a second time, you can adjust the desired setting temperature with (-) or (+), press **(OK)** to start the function. (Default value 22°C)

The  logo will be blinks 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.


4 Special function

4.1 **Keyboards lock Function**

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 “  ” logo will be displayed on the screen.
- Repeat the same procedure to unlock the key board.

4.2 **Information**

With this function You can quickly view all currents temperatures of the probe sensors connected to your thermostat (Floor, external or outside sensor) by several presses on the escape key (). This “Scroll function” is only available in the main screen.
You can view:

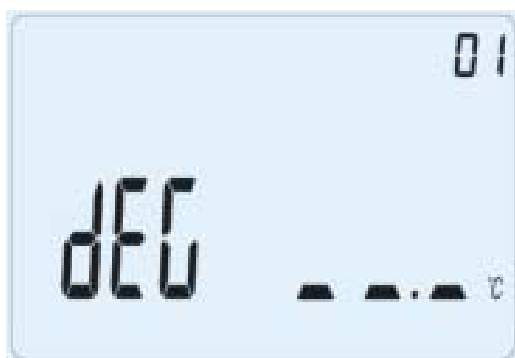
- The current setting temperature followed by the thermostat.
- The ambient temperature
- If external sensor is connected:
The Floor temperature if it is used as floor sensor.
The outside temperature if it used as outside sensor.



If Parameter “**SenS**” is set on “**Air**”, the external sensor will be used as an outside temperature sensor

5 Parameter's menu


Your thermostat has a parameter's menu, in order 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).

N°	<u>Default value</u> & other possibilities
01	dEG : Unit of the temperatures displayed <u>°C</u> Celsius <u>°F</u> Fahrenheit
02	<u> </u> : <u> </u> Selection of the Time clock unit <u>24H</u> (24:00) <u>12H</u> (12:00 AM /PM)
03	dst : Daylight Summer time change Summer<->Winter <u>YES</u> 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 with 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)

	<p>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.</p> <p>* Pay attention: Only the heating element driven by the thermostat must be used during the complete step of the calibration.</p>
05	<p>OutC , AMbC , FlrC: Calibration of the external wired probe Same calibration method as described in parameter “04 AirC” above.</p>
06	<p>HG: Anti-freeze temperature used in Holiday mode <u>Default value 10°C.</u> Use the (-) or (+) keys to change the anti-freeze setting temperature. Then press (Ok) to confirm.</p>
07	<p>ITCS: <u>YES</u>, no</p> <p>The Intelligent Temperature Control System will activate your installation in advance (2 hours maximum) to assure the desired temperature at the</p>

	<p>hour programmed following your weekly program. This automatic control system works in the following way:</p> <p>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.</p>
08	<p>Clr ALL: Reset to Factory setting</p> <p>Press and maintain (Ok) key during 10s to reset Set points temperatures and user parameters in this menu to factory default settings. User programs will also be resetted.</p> <p>* Pay attention: Ensure you that you have all necessary elements to re-setup your installation before to use this function.</p>
09	<p>Software version</p> <p>VErS</p>
10	<p>End: Exit the parameter's menu</p> <p>Press (OK) key to exit installation parameter menu and</p>




return to normal operation.

6 Technical characteristics

Measured temperature precision	0.1°C
Environmental: Operating temperature: Shipping and storage temperature:	0°C - 40°C -10°C to +50°C
Setting temperature range Comfort, Reduced Holiday (Antifreeze) Timer	5°C to 35°C by 0,5°C step 10°C (adjustable) 5°C to 35°C
Regulation characteristics	Proportional Band (PWM 2°C for 10min cycle) or Hysteresis of 0.5°C
Electrical Protection	Class II - IP30
Power Supply Operating life	2 AAA LR03 1.5V Alkaline ~2 years
Receiver Output Maximum load	Relay 5Amps 250Vac 3A in 230Vac (Free contact)

Optional External sensor	10k ohms at 25°C
Software version	Displayed in the user menu.
Norms and homologation: Your thermostat has been designed in conformity with the following standards or other normative documents:	EN 60730-1 : 2003 EN 61000-6-1 : 2002 EN 61000-6-3 : 2004 EN 61000-4-2 : 2001 Low voltage 2006/95/CE EMC 2004/108/CE

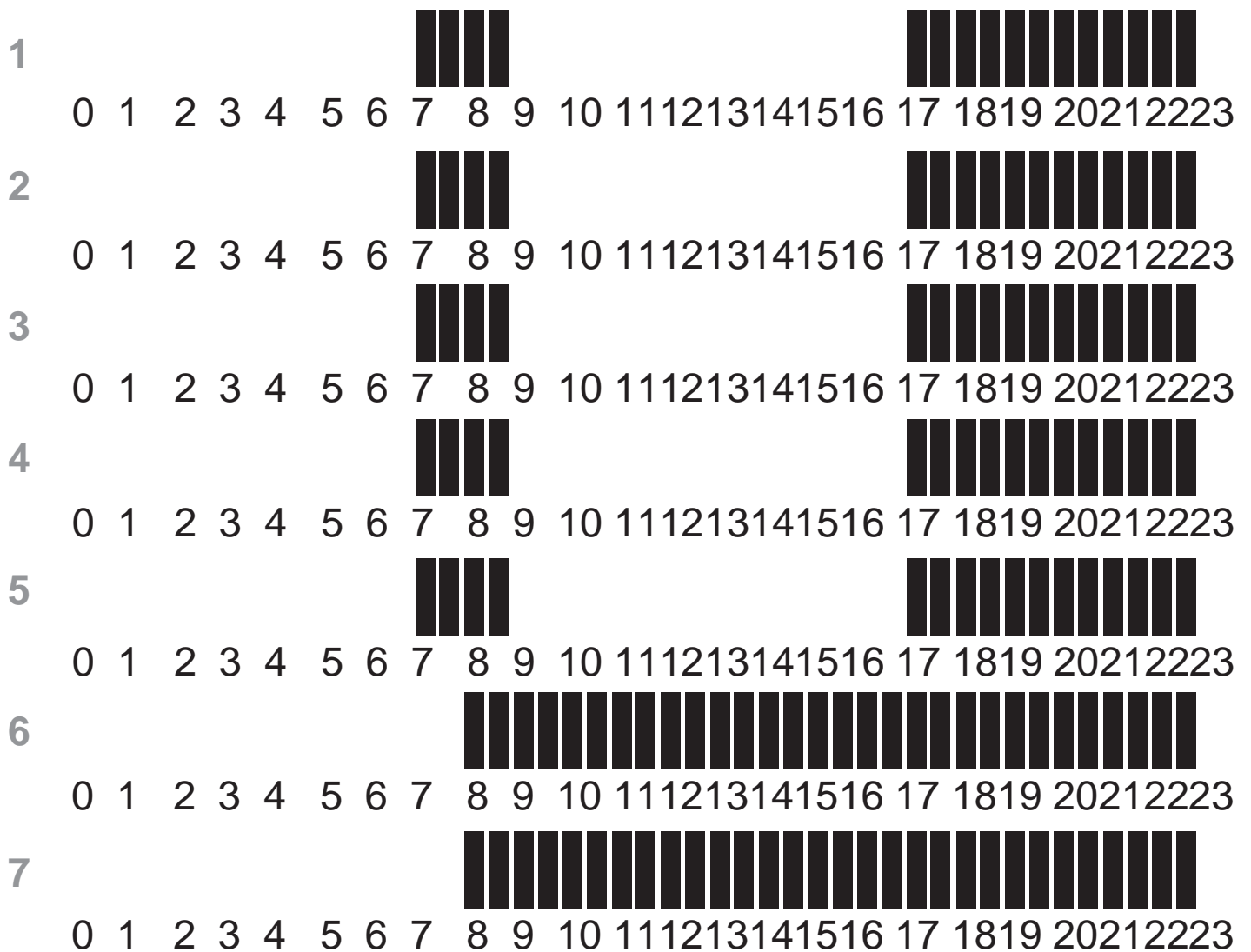
7 Troubleshooting & Solution

My BT DP-01 doesn't start	
Batteries Problem	<ul style="list-style-type: none"> - Check if the protection sticker on the batteries is removed. - Check the batteries orientation. - Check the capacity of the batteries
My BT DP-01 Led, blinks in Red	
Problem on sensors	<p> The logo blinks (ambient sensor)</p> <ul style="list-style-type: none"> - Contact your installer or seller. <p> The logo blinks (Floor sensor)</p> <ul style="list-style-type: none"> - 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	<p> The logo blinks (Batteries)</p> <ul style="list-style-type: none"> - Replace the batteries.

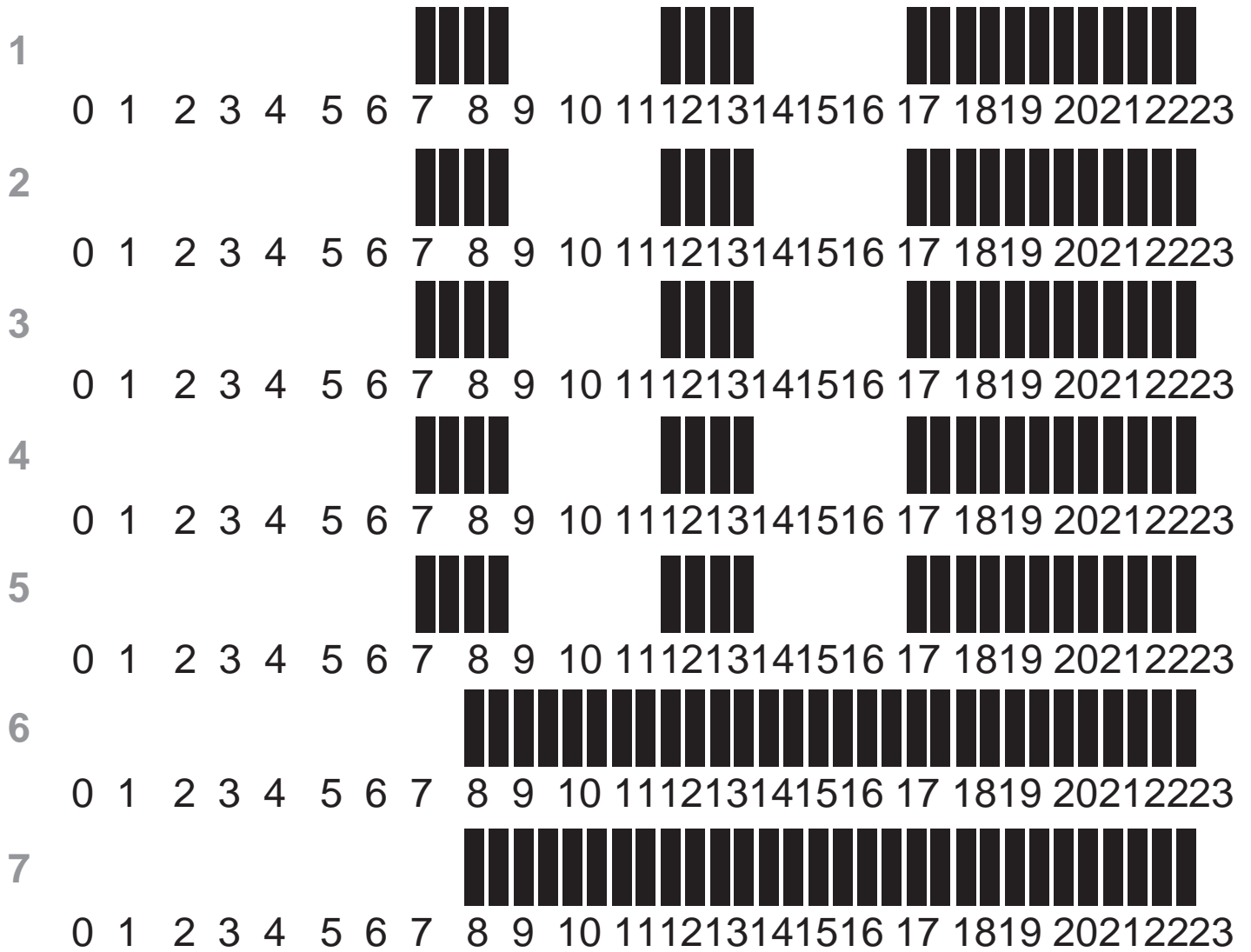
My BT DP-01 seems work correctly but the heating doesn't work correctly	
Output	<ul style="list-style-type: none"> - Check the connections. - Check the power supply of the heating element. - Contact your installer.
My BT DP-01 seems work correctly but the temperature in the room was never in accordance with the program.	
Program	<ul style="list-style-type: none"> - Check the Clock. -The difference between Comfort & Reduced temperature is too high? - The step in the program is too short? - Contact your installer, to check & adjust the regulation parameters with your heating system.

Annexes (Built-in Program description)

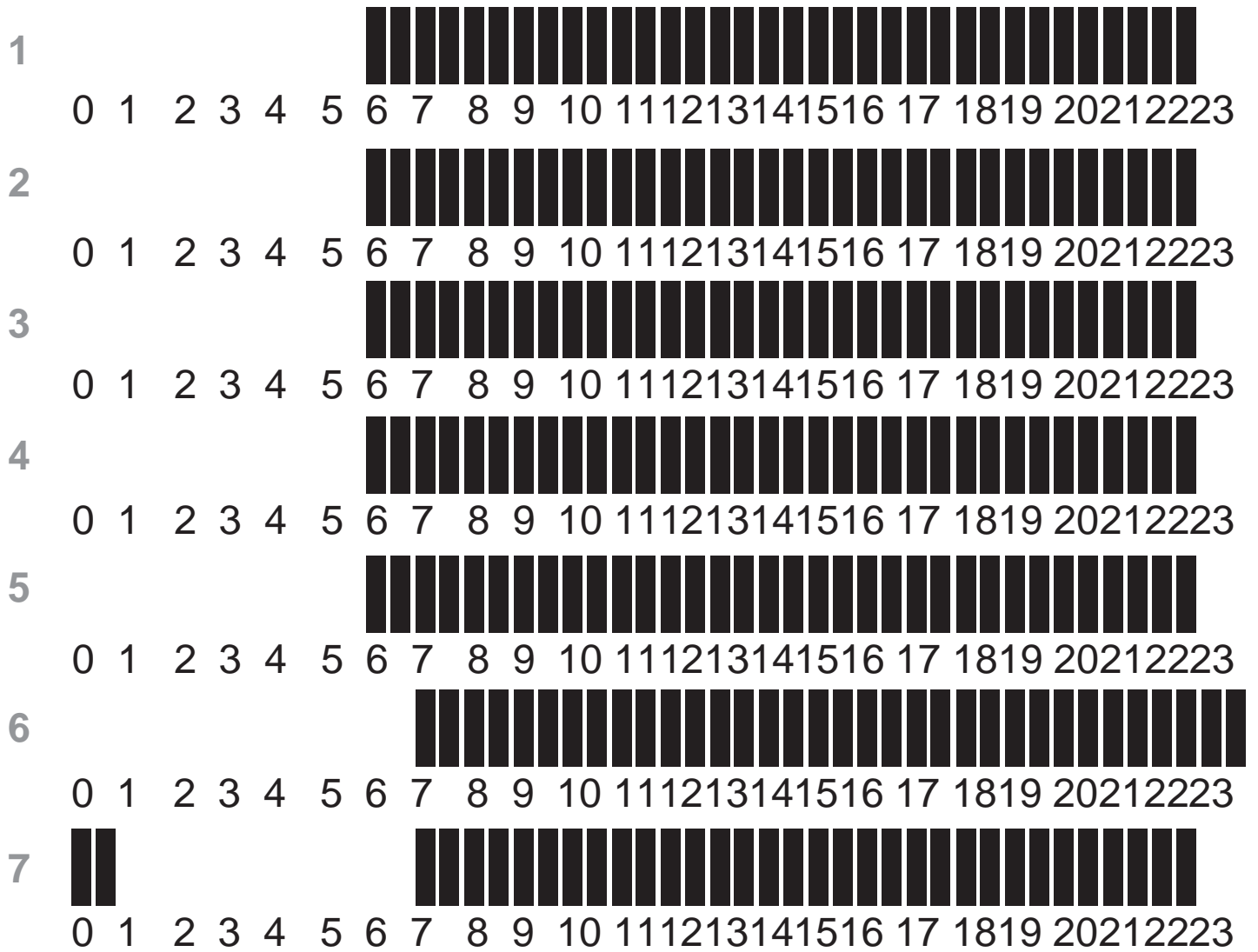
P1:



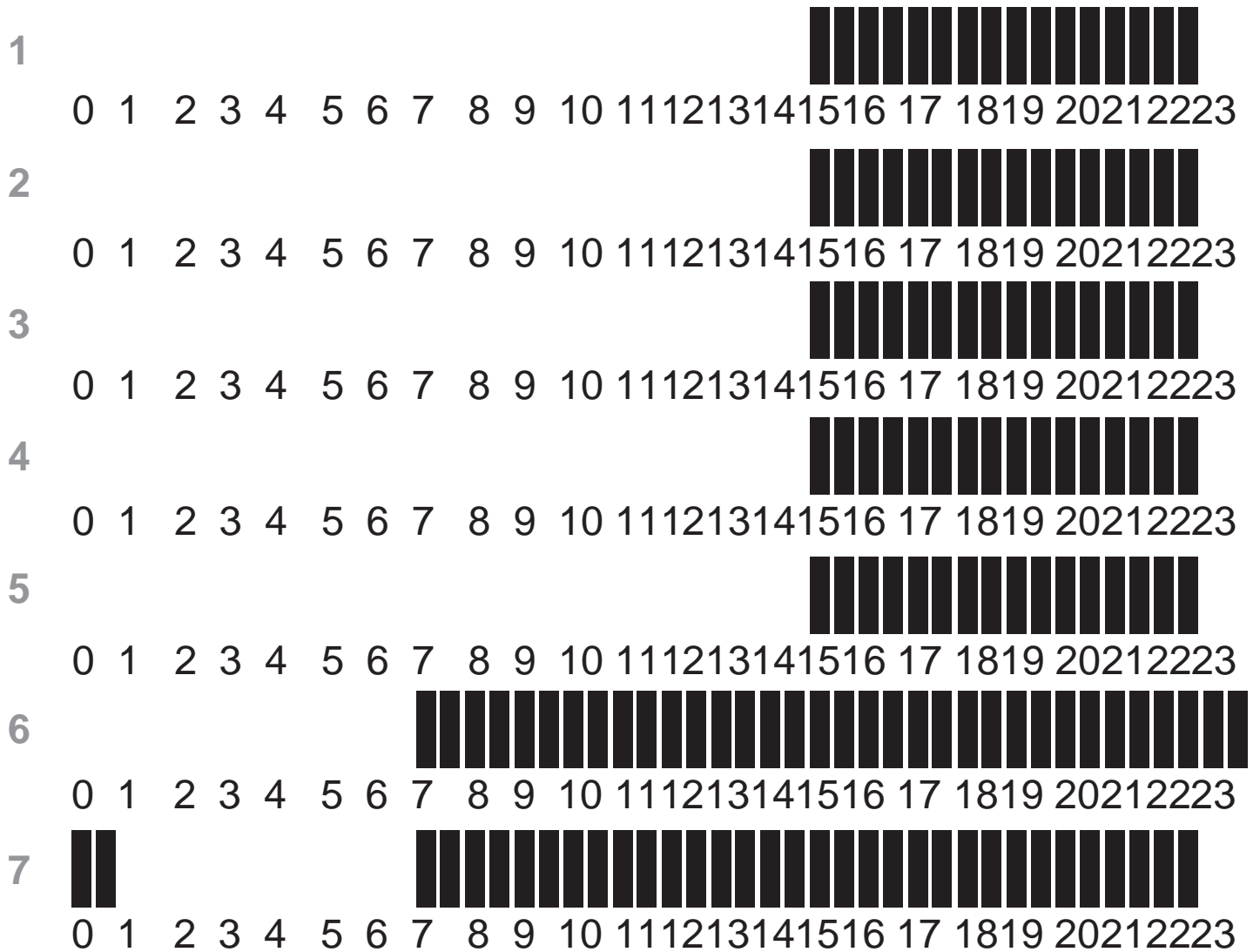
P2:



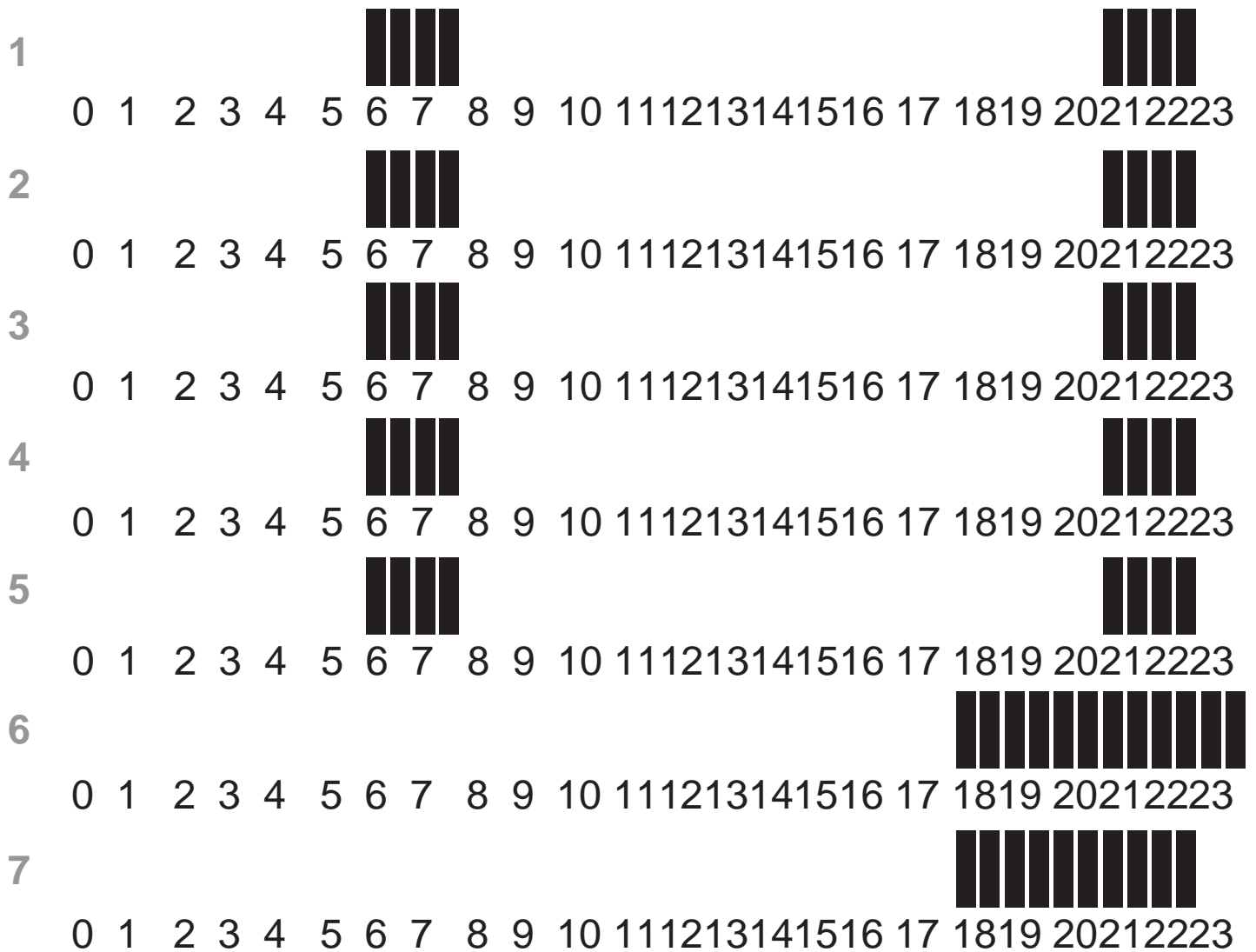
P3:



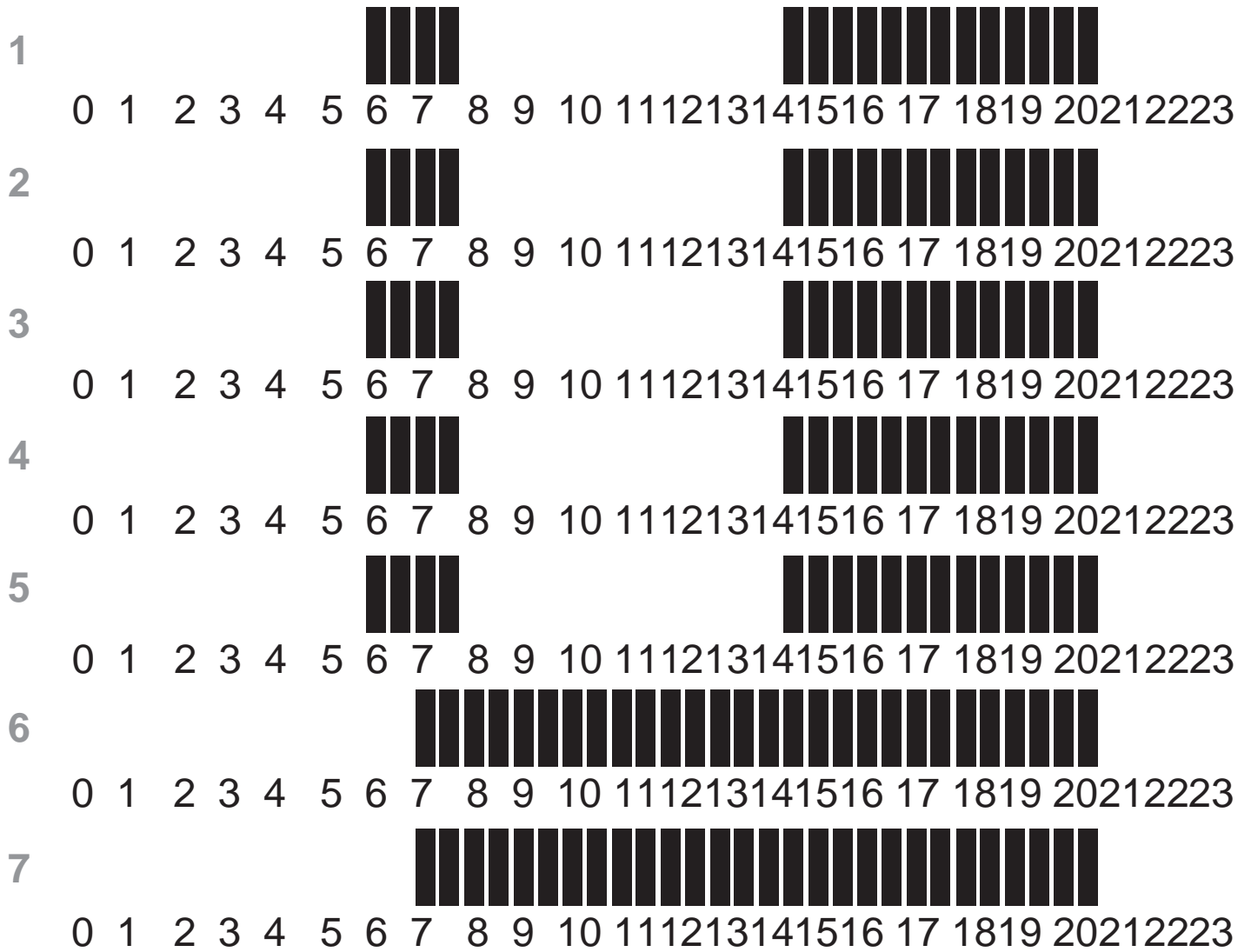
P4:



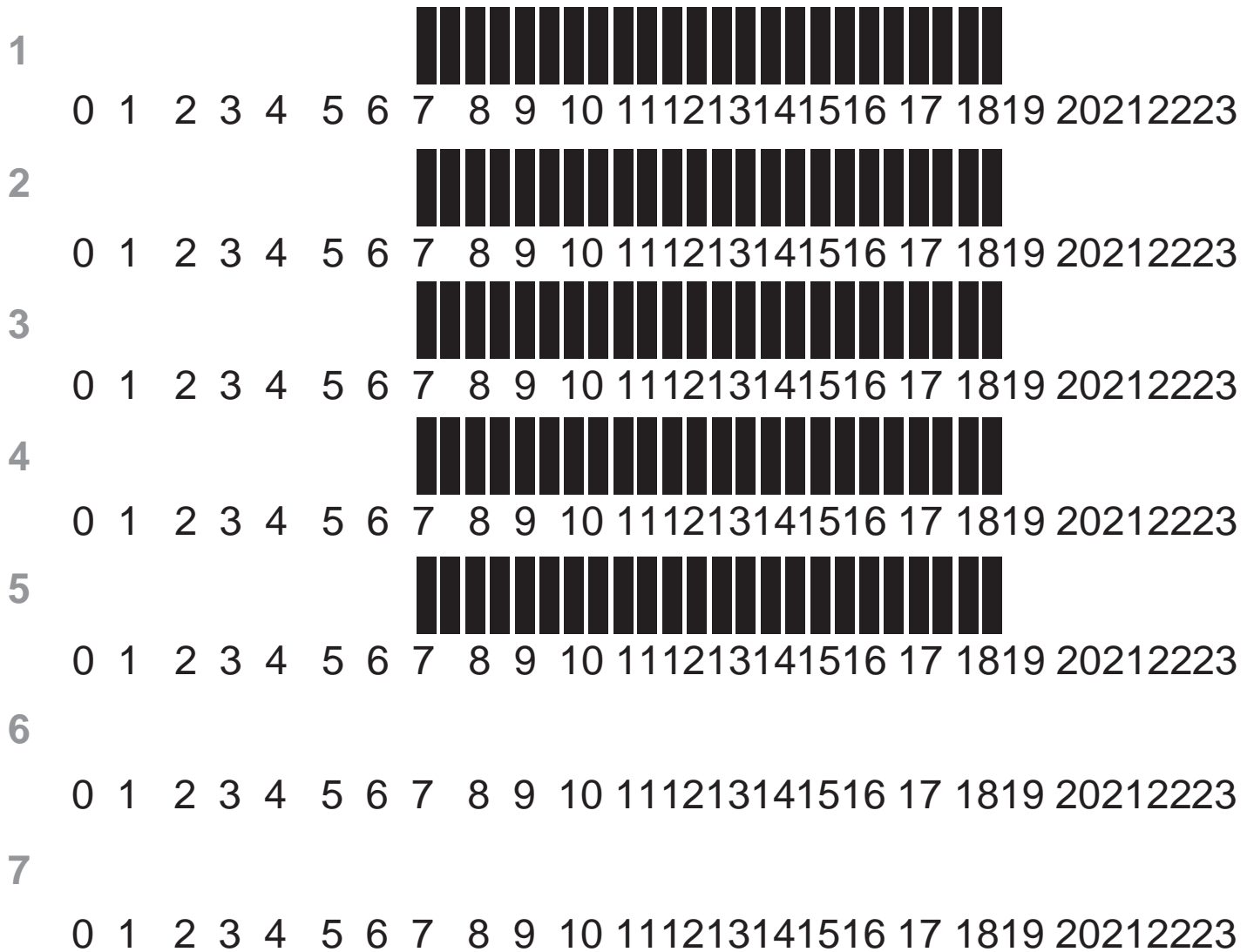
P5:



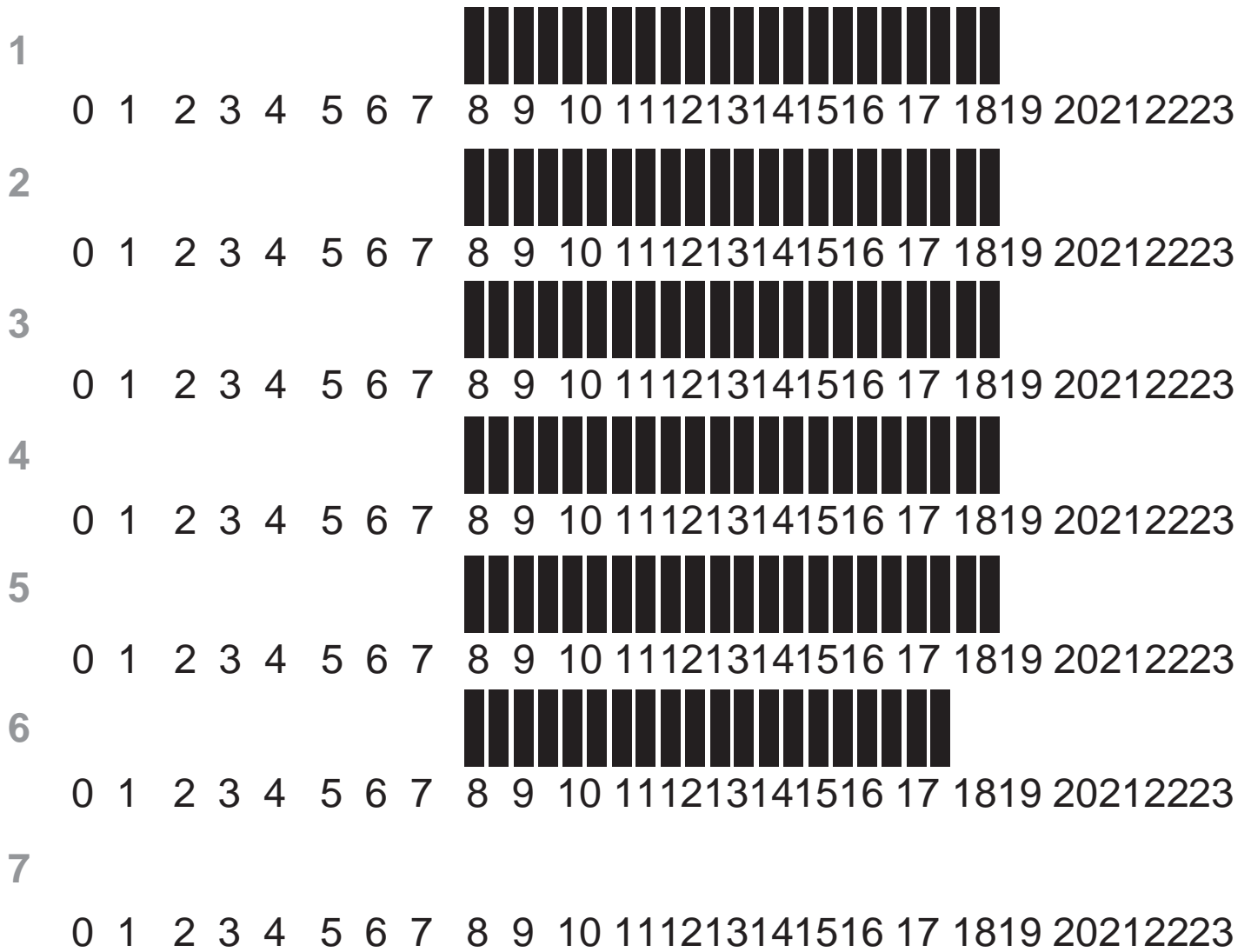
P6:



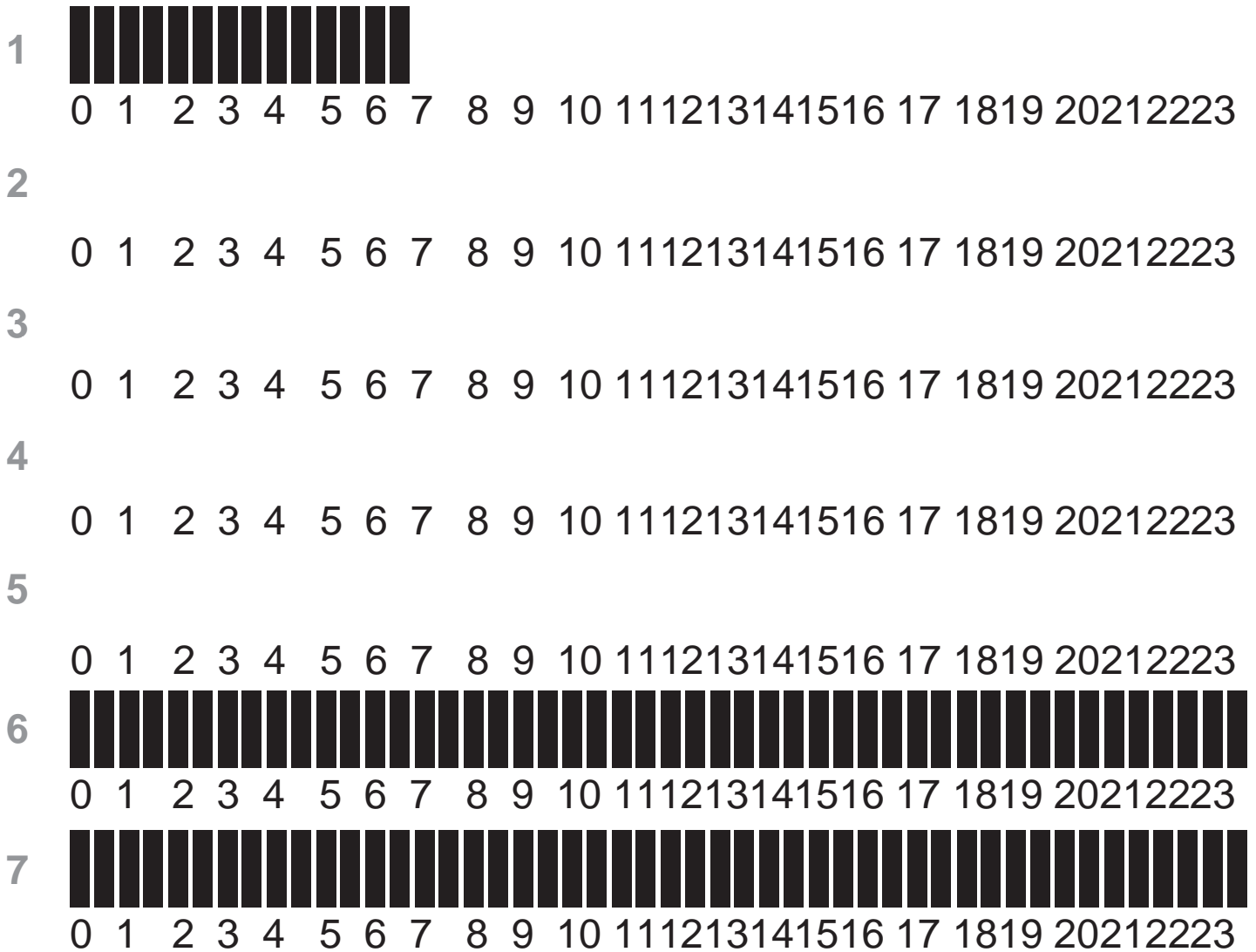
P7:

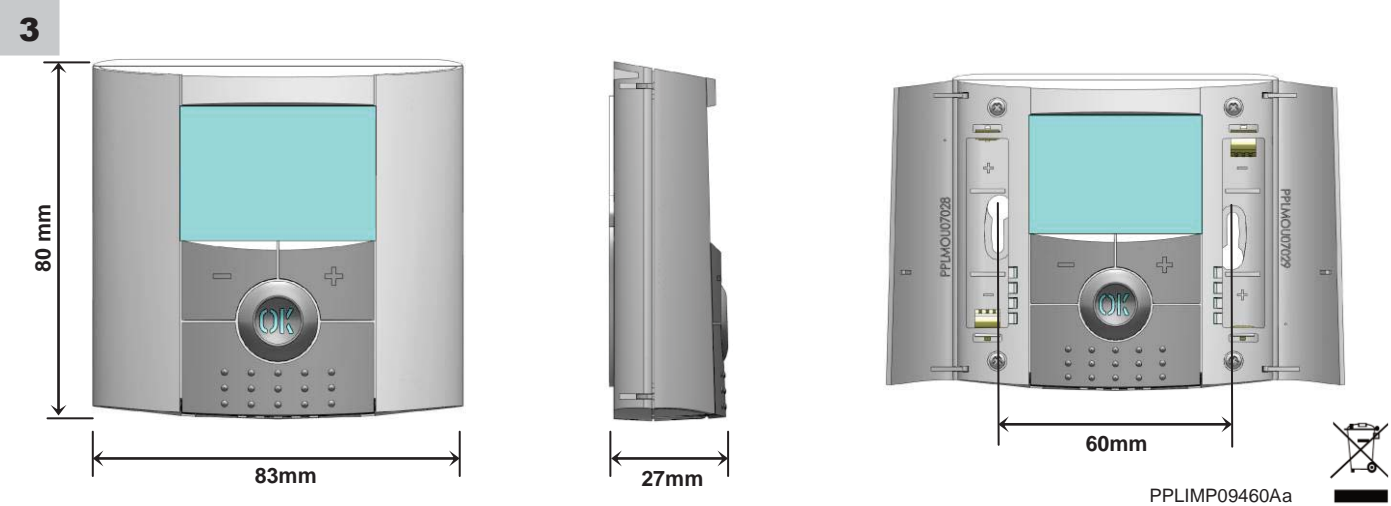
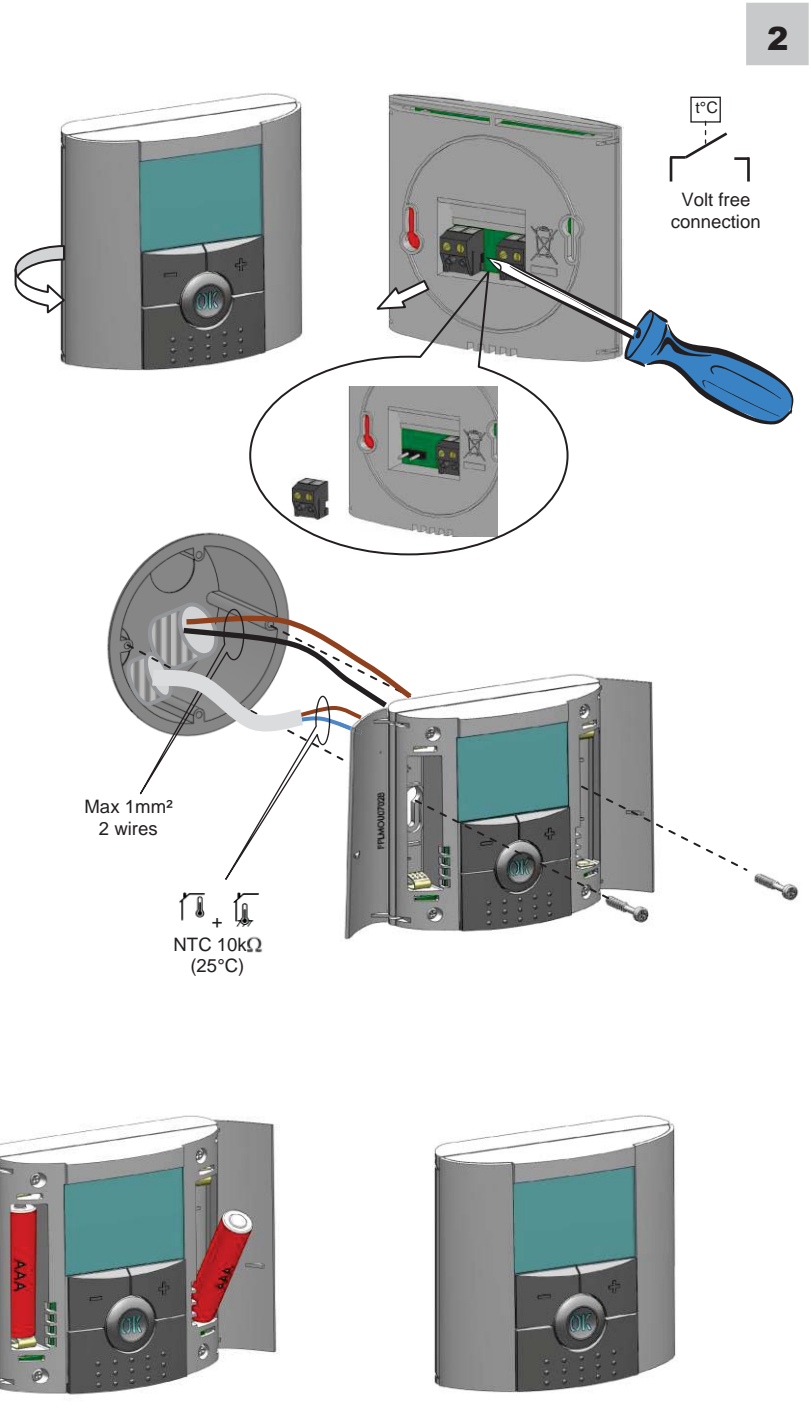
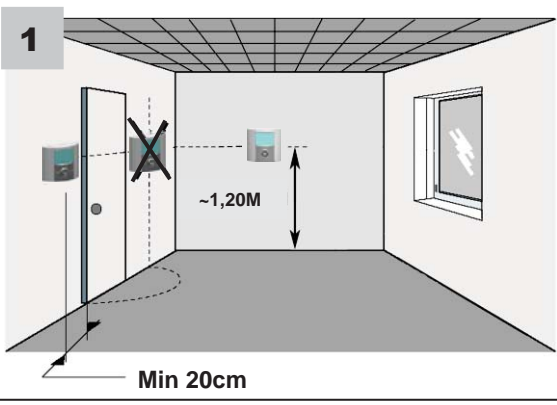


P8:



P9




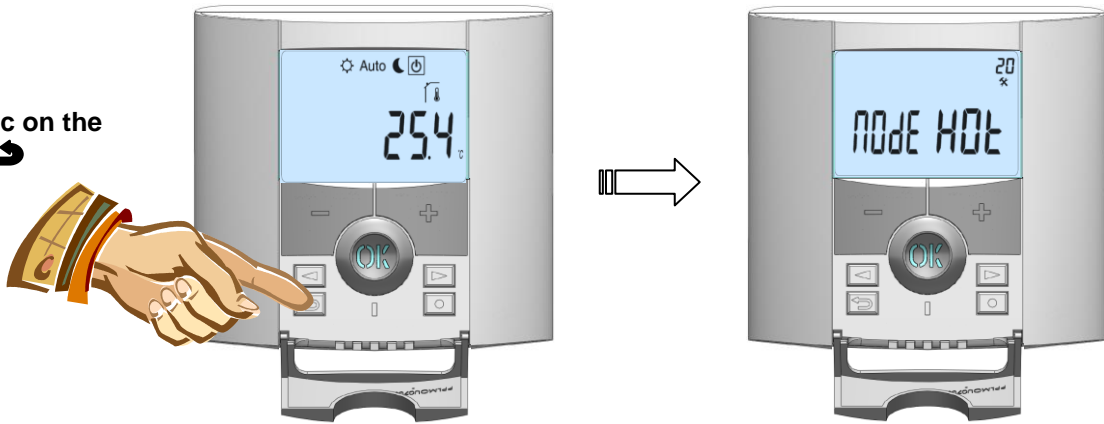




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



How to accede it on the “DP” version

Press 10 sec on the key 




In order to enter in the menu, select and valid the **OFF** mode (), then press on the escape key  during 10 seconds, the following display with the first parameter must be appears:



- 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.

 **Note:**

You could reload one parameter to the default value if you press the escape  key when the parameter value blinks.

Parameters		Installer's Advanced Menu		
N°	names	Description of the parameter	Factory value	Other possibility
20	Mode ---	Working mode	"Hot" For heating application	"cld" For cooling Application "Rev" The working mode can be done by the end user directly on the main menu. For reversible application
The two followings parameters are only available on the wired version BT-DP				
21	Out ---	Type of output	"NC" Normally Closed (Output closed when demand)	"NO" Normally Open (Output opened when demand)
22	PumP ---	Anti-lock-braking function for pump. When the pump hasn't worked on a particular day, start it up for one minute each day	"Yes" Function activated	"No" Function deactivated

23	REGU ---	Selection of the sensor used for the regulation.	"AIR" Internal ambient sensor	"FLR" Floor sensor regulation "FL.L" Air regulation with floor limitation possibilities (see parameters 26&27) "amb" External ambient sensor
24	AirS ---	View of the measured values of the ambient sensor.	"_. _"	
25	OUTS ---	View of the measured values of the floor (external) sensor.	"_. _"	
26	FL.Lo ---	Lower limit of the floor temperature.	"no" The lower limitation is not used	From 5°C to "FL.Hi"
27	FL.Hi ---	Upper limit of the floor temperature.	"no" The upper limitation is not used	From "FL.Lo" to 37°C
28	Type ---	Selection of regulation type	"Reg" Proportional band (PWM)	"hys" Hysteresis (On/Off)
29	tCy ---	Only available if the parameter 28 is set on "rEG" value. Selection of the proportional band duration in minutes (cycle duration)	"10" Ideal value for all Electrical floors heating application.	You could increase this value if the thermostat is used for other heating application (Oil Boiler...)
29	HYSt ---	Only available if the parameter 28 is set on "HySt" value. Selection of the hysteresis value in °C	"00.5"	"01.0"
30	t.on	Minimal starting time in minutes	"002"	Adjustable "0" to Tcy/2
31	t.off	Minimal resting time between 2 heating cycles in minutes	"002"	Adjustable "0" to Tcy/2
32	Bp --	Value of the proportional band in °C Note: If the value of proportional band is too big the system reactivity will be slower and could affect the steps of the program.	"2.0" Ideal value for all Electrical floors heating application.	Adjustable "1" to "6.0" A well insulated house « 1.5°C » A not insulated house « 4°C »
33	Cp	Compensating value of the regulation This value will need to be modified only if the thermostat is perturbed by the heating element. Generally never the case with electrical floor heating.	"00.0"	Adjustable "0" to "14.0" Increase this value if the thermostat is too close to the heating source.
34	Clr EEp	All parameters will be reloaded with the factory value.	Press on the (OK) key during few seconds.	
35	End	To exit the installer's menu	Press on the (OK) to exit.	