◻ HERZ®

Electronic room temperature controller wired

datasheet **Roomtemperature thermostat,** Issue 0419

⊠ **Table of content**

⚠ **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 requirements. 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 an incompetent use of the control. Any modifications and amendments are not allowed for safety reasons. The maintenance has to be performed by service companies or 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 1 **7795** 01 and 3 **F792** 00 are developed to control and manage all type of electrical heating systems or materials.
- The controllers are designed for the use in residential rooms, office spaces and industrial facilities.
- Verify that the installation complies with existing regulations, to ensure the proper use of the product.

⚠ **Safety instructions**

The thermostats have to be installed in dry places, as they are not resistant to spray or dripping water. A confusion of the 230 V connections leads to an increased lethal risk and can damage the thermostat device as well as other devices.

HERZ Digital clock with 7 day program

datasheet 1 **7795** 01, Issue 0419

☒ Dimension in mm

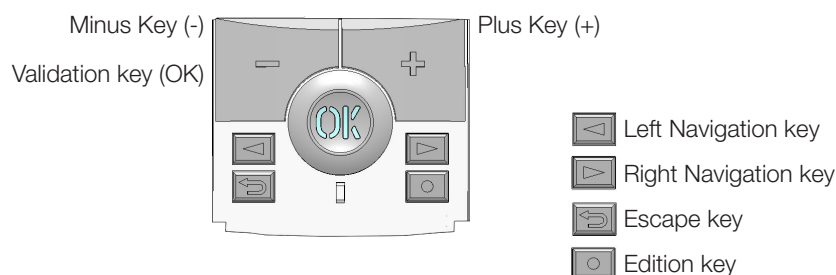
☒ Description of the Thermostat

The electronic programmable thermostat with LCD display is specially designed to control different types of heating systems. It was designed to optimize your energy consumption and heating comfort:
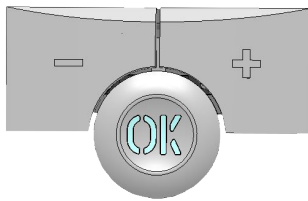
Advantages of the control system:

- modern design and material
- function „easy creation of programms"
- weekprogramming in steps of 30 minutes
- function „temporary deactivation of the programm"
- Anti freeze function
- Holiday or visit function
- EEPROM non volatile memory
- 2 AAA batteries (up to 2 years operating time)
- 2 parameter menus (user and installer)

☒ In **option**

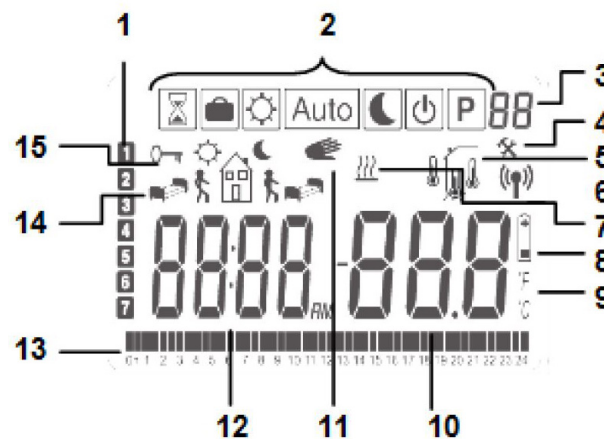External sensor with several possibilities of regulation. (Floor, combined…)

Minus Key (-)

Plus Key (+)

Validation key (OK)

◁ Left Navigation key

▷ Right Navigation key

↩ Escape key

○ Edition key

LED & Display

Red fix: Heating demand (when Backlight is lit up)

Green flash: Your Validation is required

Red flash: Error on sensor or batteries

Status of the LED

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 sensor

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

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

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.

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.

☑ **Technical specifications**

Operating temperature	0 °C - 50 °C
Shipping and storage temperature	-10 °C to + 50 °C
Electrical protection	IP30
Installation category	Class II
Pollution degree	2
Temperature precision	0,1 °C
Setting temperature range	5 °C to 37 °C
Comfort, Reduced	by 0,5 K steps
Holiday (Anitfreeze)	10,0 °C (adjustable)
Heating reference input	5°C to 37°C
Regulation characteristics	Proportional Band (PWM 2 K/10min) or Hysteresis 0,5 K
Swichting contact	potential-free , max.- 3A (250V AC)
Power supply	2x AAA LR03 1,5V
Operating life	Alkalie ~ 2 years
Sensing elements: Internal & External (option)	NTC 10 kΩ at 25 °C
Softwareversion	Showed in parameter menu VERS xxx
compatible receivers	Flush type Wall type Plus type
Standards and homologation: Your thermostat has been designed in comformity 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 EN300220-1/2 EN301489-1/3 R&TTE 1999/5/EC Low voltage 2006/95/CE EMC 2004/108/CE

☑ **First installation**

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

☑ **Batteries installation**

- Open the two side 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 covers.
- Now your thermostat will propose you to adjust the current time and date.

☑ **Time and date adjustment**

Each time a value flashes, you can adjust it with the **(-)** and **(+)** keys, once the value is chosen, confirm 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 of the order 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

When the message **"Save"** and the blinking green LED appears, press **(OK)** to confirm the adjusted time and date. You can always reach the time and date adjustment, by pressing and maintaining the edition (●) key during 2 seconds in normal operating modes.

☒ **Starting**

The thermostat is now ready to work. The default working mode is automaticly programed with the standard built-in programm **„P1"** .
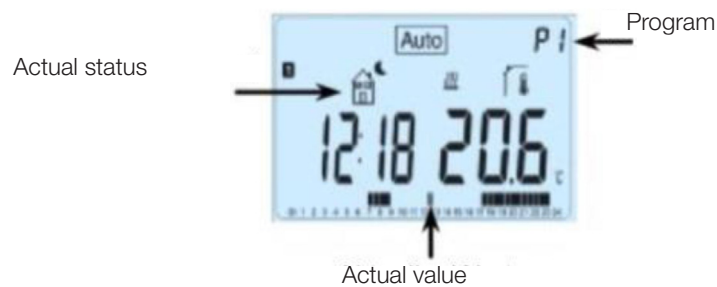
- **Monday to Friday**

☼20°C
☾18°C
07:00   09:00   17:00   23:00

- **Saturday to Sunday**

☼20°C
☾18°C
08:00   23:00

Note: You can customise your program as you want. See the next part **"Working mode definition"** for more explanations.

Actual status

Program

Actual value

Note: 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.

☑ **Working mode definition**

Following your installation (Unit installed), your thermostat will offer different possibilities. Following the model of the receiver linked with your thermostat, you will have also different possibilities for the working and regulation mode (i.e. Floor regulation, air regulation combined with floor limitation, Pilot wire function…).

- **Autonomous working**

Your thermostat has several working modes to allow you, to adjust your unit according to your life habits.

- **Changing 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.
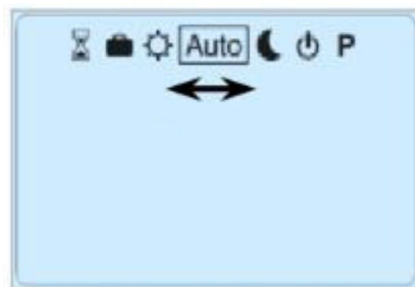
☑ **Manual Mode - Comfort** ⚙

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.

☑ **Manual Mode - Eco** ☾

Manual working mode, the reduced setting temperature will be followed at all time. By pressing the **(-)** or **(+)** key, the reduced setting temperature starts to blink and can be adjusted.

☑ **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 the 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 **(>)**.

☑ **Automatic mode** Auto

In this mode the thermostat will follow the chosen program (Built-in or customized) according to the current time, the comfort and the reduced setting temperatures. You can easily override temporarily the current program by pressing **(-)** or **(+)**. The thermostat jumps to the 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.

☑ **Program mode**

Program followed

Current day

Program codes

When you enter in the program mode, the first operation is to chose the program number with the **(-)** or **(+)** key. You can choose between a built-in program from **P1** to **P9** or a user program from **U1** to **U4**.

If you choose a built-in program between **P1** to **P9**, you can choose between the following 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 next part 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).

☒ **Default setting:** U1, U2, U3, U4 = Comfort for the whole week. Press on the edition key (●) to customise a user program.

☒ **Symbols and explanation for program creation**

- ☀ First step of the day (☼ Comfort temperature).
The wakeup hour needs to be adjusted.

- ☀ Middle step of the day (☾ Reduced temperature).
- The leaving hour needs to be adjusted.

- ☀ Middle step of the day (☼ Comfort temperature).
The comeback hour needs to be adjusted.

- ☀ Last step of the day (☾ Reduced temperature).
The sleeping hour need to be adjusted.

The programm steps have 30 minutes.

Each time a value or icon blinks you are able to make a choice with **(-)** or **(+)** keys, once the choice is made, press the **(OK)** key to jump to the following steps. The program creation will always start with the day 1 (Monday).
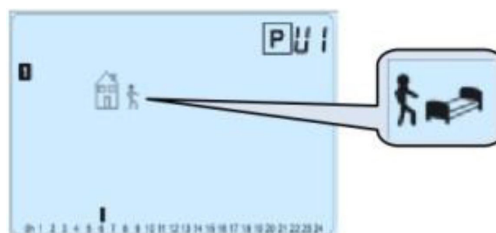
Once you have pressed the (●) key, the following display will appear:

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

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

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

1. choice is to choose the sleep icon. (End of the day)

2. Ccoice is to choose the leaving icon, to add one step to the program during the day.

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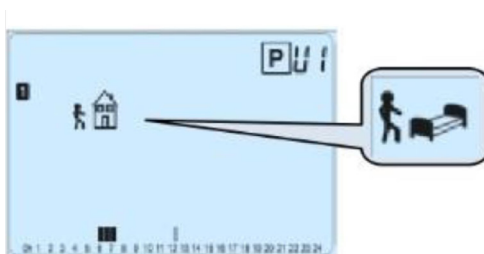

When the step „hour" is set press **(OK)** to jump to the next step.

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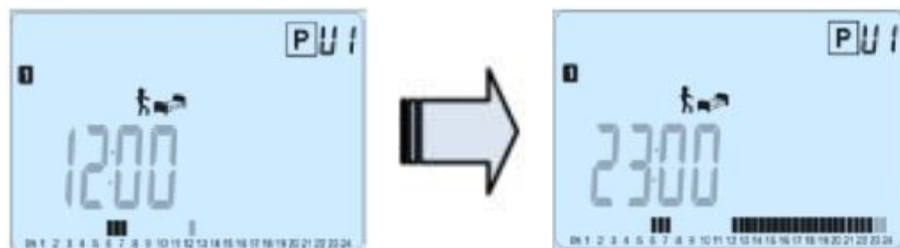

Press **(OK)** to confirm and go to the following step.

You are again invited to choose the type of next steps of the program (blinking icons):

1. choice is to choose the sleep icons. (End of the day)

2. 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 confirm and finish the edition of the first day.

Now you can choose to copy the program day just created to the subsequent days. Make the choice between **"Yes"** or **"no"** with **(-)** or **(+)** and confirm 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 days (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 the blinking green LED appears.

Press the **(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 the operating mode.

☑ **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 the left days 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.

☑ **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 it is 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 is 22 °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.

☑ **Keyboard lock function** 0⊓

Use this function to prevent all changes of your settings (in a child room, public area…). To activate the key lock function, first press maintained the escape key (⤹) and then press simultaneously on the edition key (●) . The "0⊓" logo will be displayed on the screen. Repeat the same procedure to unlock the key board.

☑ **Open window function**

Conditions of open window detection:The thermostat detects an **„Open window"** if the displayed temperature (internal or ambient sensor) decreases by 3 °C or more during a 5 minutes period (or less). In this case, the thermostat stops heating for 15 minutes. The function remains active during those 15 minutes so the stop can last more time, if the temperature continues decreasing. As an indicator of this function, the room temperature will blink.

☑ **Return to normal mode**

The thermostat returns automatically to the normal mode after the stop period. The function can be overwritten by pressing the **(OK)** button during the stop heating phase. Then the blinking temperature should stop to indicate the end of the detection.

☑ **Special cases**

This function doesn't work if the thermostat is in the floor regulation. This function also doesn't work if the thermostat is in the **OFF** / Antifreeze Mode: If the temperature is less than 10 °C, the thermostat will regulates at 10 °C during the stop phase.

☑ **Information**

With this function, by several presses on the escape key (⤹), you can quickly view all current temperatures of the probe sensors connected to your thermostat or your receiver linked (room, ambient or floor sensors). This "Scroll function" is only available in the main screen.

Number	Default value & other possibilities
00	**rF INI:** Radio configuration Sends the radio link signal in order to assign the RF Thermostat with it's RF receiver. You also need to set simultaneously the receiver in the radio configuration mode (On a simple receiver press and maintain button until the green light lit's up, see receiver leaflet).

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 sensor. 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 1.5 m 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	**OutC, AMbC, FlrC:** Calibration of the external wired sensor. 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: NO, yes** 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.

Number	Default value & other possibilities
08	**Clr ALL:** Reset to Factory setting 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. **Pay attention:** Ensure you that you have all necessary elements to re-setup your installation before using this function.
09	Displayed only if it is linked with a multizones receiver **CHAn—** --: number of the linked zone
10	Software version **VErS ____**

⊠ **Troubleshooting & Solution**

| My Thermostat 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 Thermostat Led blinks in Red	
Problem on sensors	The logo blinks (ambient sensor) 🌡 Contact your installer or seller The logo blinks (Floor sensor) 🌡 Check the connection of the sensor on the receiver. Disconnect the sensor and check it with an ohmmeter (the value must be around 10 kΩ).
Batterien sind zu schwach	The logo blinks (Batteries) 🔋. Change the batteries.
My thermostat seems to work correctly but the temperature in the room was never in accordance with the program	
Program	Check the Clock The difference between Comfort & Reduced temperature is too high? The step in the program is too short? Your installation use an energy saver, check the correct working. Contact your installer, to check & adjust the regulation parameters with your heating system.

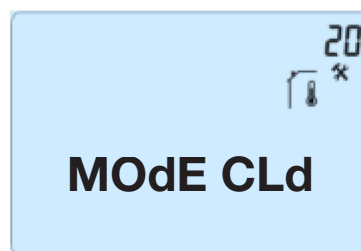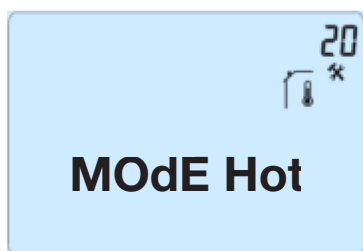☑ **Advanced installer's parameters menu**

External sensor
Type NTC 10 kΩ
at 25 °C (ß = 3950)

☑ **Entrance in the thermostat menu**

Press 10 sec on the key 🔙
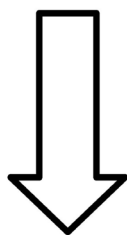
In order to enter in the menu, press on the escape key ➥ during 10 seconds, the following display with the first parameter appears: With the **(+)** and **(-)** it is possible to change between the (Hot Mode) and the (CLd Mode).

MOdE Hot

MOdE CLd

Once you entered in the menu, go to the parameter you want to select, by using the keys **(<)** or **(>)** . Use the key **(+)** 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		
Number	**Description**	**Description of the parameters**	**Factory value**	**Other possibility**
21	Hot ---	Use this option if you want to allow the zone to work in cooling mode	**„Hot"** Function activated	**„Cld"** Function deactivated

parameter		advanced installation menu		
Number	Description	Description of the values	Factory settings	other Possibilities
24	**RecS - - -**	View of the measured values of the floor sensor connected to the receiver.	**"- -.- "**	
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	**Bp1 - - -**	Screed choice.	**„uf1"** For liquid screed with low thickness < 6cm	**„uf2"** For traditional screed with thickness > 6cm
29	**Bp2 - - -**	Floor covering choice.	**„Fl1"** For tiles	**„Fl2"** For wood parquet (floating or not)
30	**wir**	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"**	**„15,0 °C"**
32	**max**	Maximal value of the setting range	**„20,0 °C"**	**„37,0 °C"**
33	**Win**	Automatic open window detection. (See user guide for more explanation)	**„Yes"** Function activated	**„No"** Function deactivated
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.	

⊠ Installation

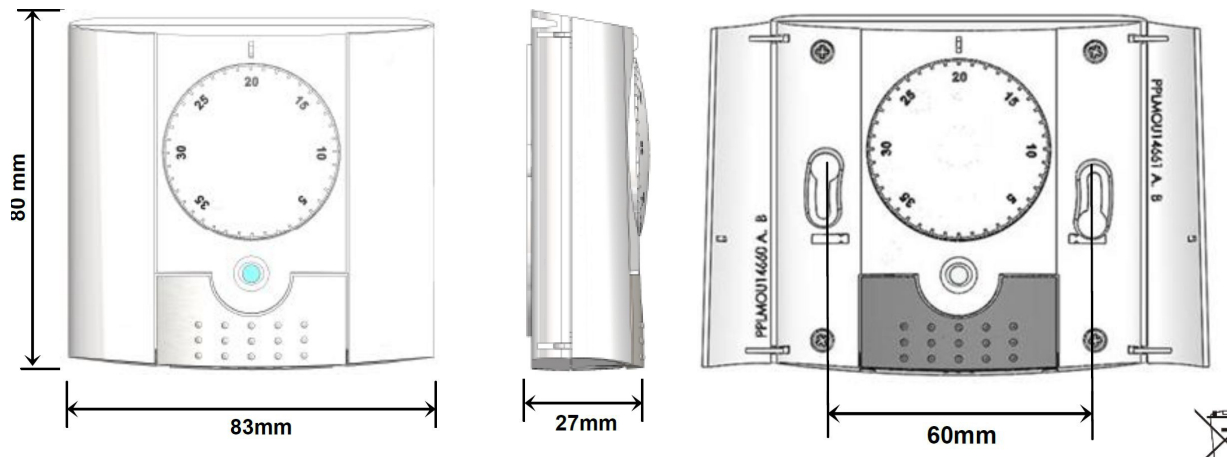Before the installation of the room temperature thermostat to the following steps have to be done:
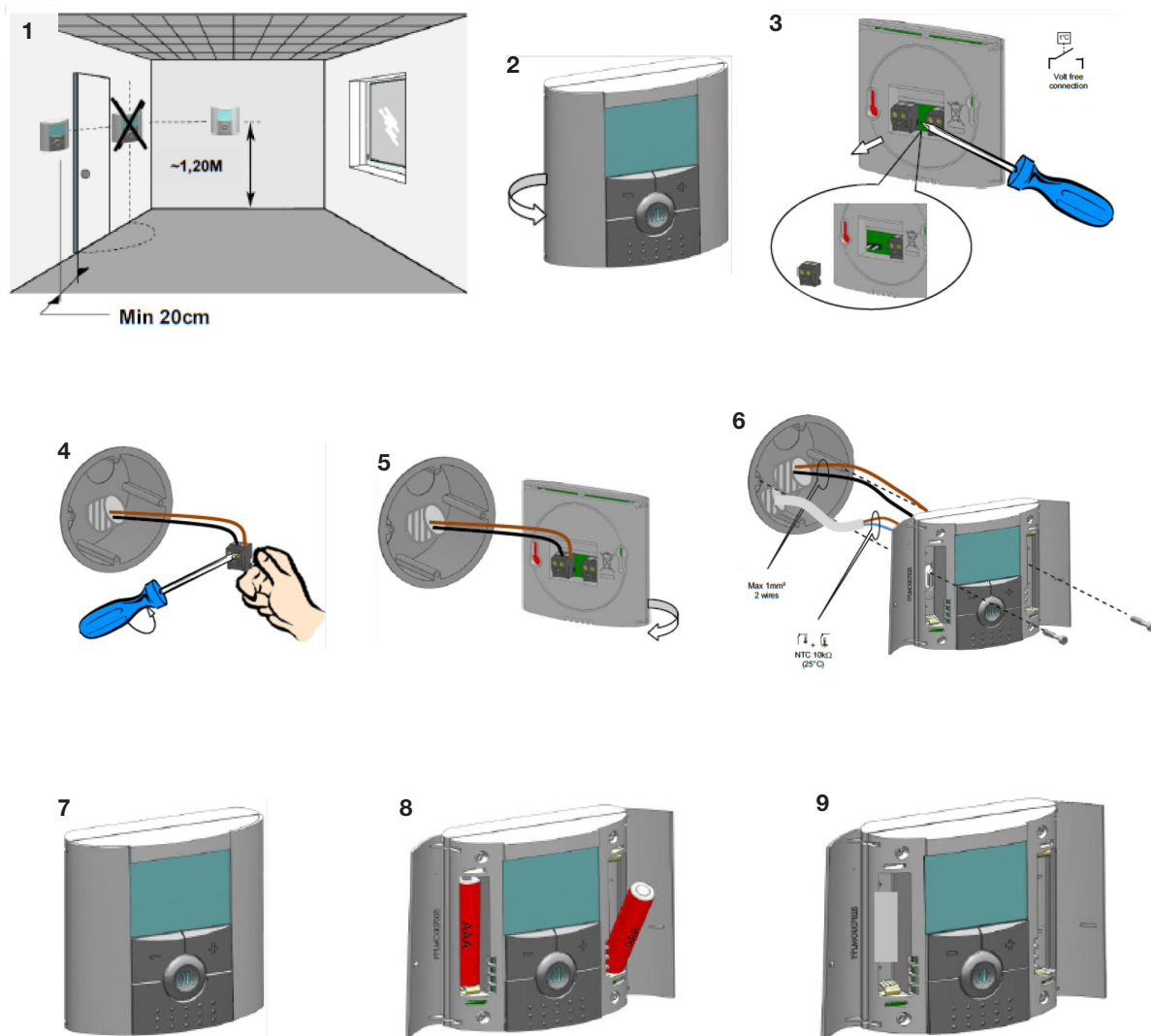
HERZ Clock thermostat with analogue timer

☑ **Dimensions in mm**

☑ **Thermostat description**

The analogue thermostat is used for water underfloor heating, which is controlled by actuators. It was developed to optimize your energy consumption and heating comfort:

Advantages of the Thermostat:

- modern design and material
- 2 AAA batteries (up to 2 years operating life)

☑ **Start up**

The LED indicator will flash quickly during 4 seconds.

Comfort mode: ☼ Controlls the temperature permanently to the chosen value, depending on the adjusting knob.

ECO/Decrease mode: ☾ Select this mode to turn off the thermostat controlled area. Therefore the gray plastic cover must be opened.

☑ **Decrease mode**

The set temperature is the temperature set by 2 Kelvin lower.

☑ **Comfort Mode**

The room temperature is regulated to the temperature which is set by the rotary knob. The controller regulates over an internal room sensor. Other silent controls (by means of triac) are connected directly to the actuators or to a control distributor.
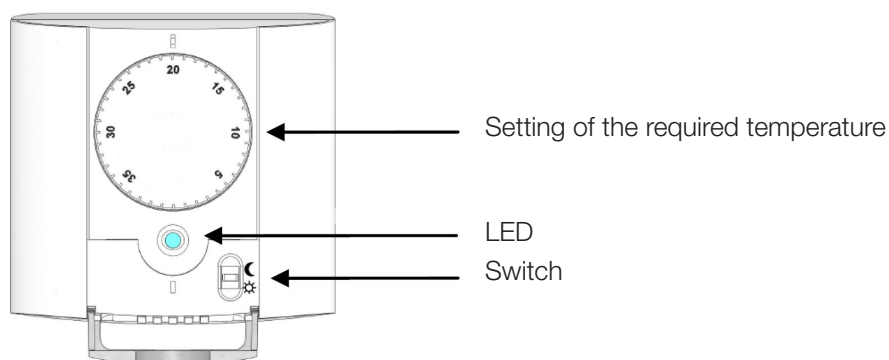
☑ **Technical specifications**

Environmental conditions	0 °C - 40 °C
Operating temperature	0 °C - 50 °C
Shipping and storage temperature	- 10 °C - 50 °C
Electrical protection	IP30 Class II
Setting temperature range	5 °C to 35 °C
Swichting contact	potential-free, max. 3A (250V AC)
Power Supply Operating life	2 x AAA (Micro) 1.5 V ~ 2 years
Sensing elements: internal and external (option)	NTC 10 kΩ at 25 °C
CE-directives Your product has been designed in conformity with the European Directives.	LVD 2006/95/EC EMC 2004/108/EC RoHS 2011/65/EU
Product conformed to Classification	UE 811/2013 und 2010/30/UE IV

☑ **Mode**

When you modify the setting temperature or the mode, the thermostat manages the receiver. The LED flashes quickly in green for 2 seconds (quick red flashes for low batteries indication). When the batteries must be replaced, always exchange the 2 batteries at the same time.

☑ **Operating status display**

- **Constant red:** (Internal Sensor regulation) Heating indication (few sec after consign adjustment).

Setting of the required temperature

LED
Switch

☒ Installation

Before the installation of the room temperature thermostat to the following steps have to be done:

1

~1,20M

Min 20cm

2

3

4

N L

L N N OUT

N

OUT

230Vac

5

L N N OUT

6

Max 1mm²

7