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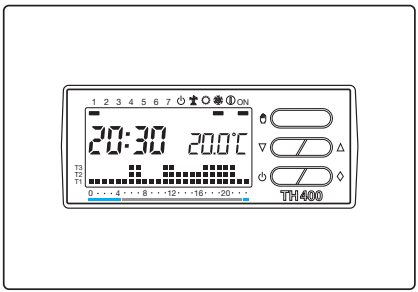
Programmable thermostat

FB00804-EN

CE



TH/400

INSTALLATION AND USE MANUAL

EN English

General precautions

- ⚠ Important safety instructions: READ CAREFULLY!
- Make sure that the power supply network is equipped with an all-pole disconnection device which provides category III protection against power surges, as required by the installation regulations.
- The installation, programming, commissioning and maintenance of the product must only be carried out by qualified, expert technicians in full compliance with the regulations in force.
- Wear anti-static clothing and footwear if performing work on the circuit board.
- Store this information.
- Always disconnect the device during cleaning and maintenance work.
- The equipment must be used solely for the purposes for which it was expressly designed. Any other use is to be considered dangerous.
- The manufacturer declines all liability for any damage as a result of improper, incorrect or unreasonable use.
- ⚠ Warning: danger of explosion if the batteries are replaced with others of the wrong type.
- Once batteries are dead they must not be thrown away with unsorted general waste but collected separately and sent for suitable recycling.

DISPOSAL - Make sure the packaging material is not disposed of in the environment, but rather disposed of in compliance with the laws in effect in the country in which the product is being used.
At the end of the product's life cycle, make sure it is not disposed of irresponsibly. The equipment must be disposed of in compliance with current laws and its components recycled where possible. The components that should be recycled are marked with the material's ID marker.
Reference legislation - The product complies with the reference directives in force.

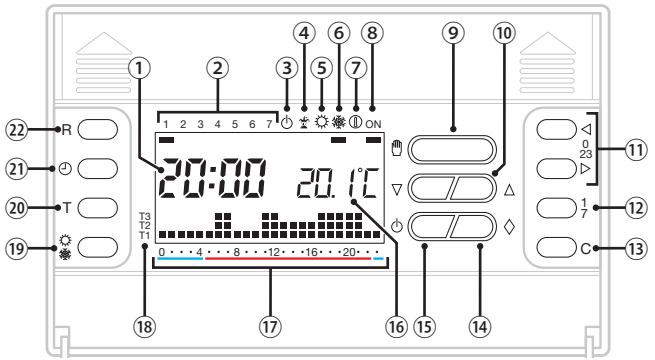
Description

The device has been designed to ensure perfect temperatures any hour of the day, any day of the week.

Installation takes a matter of minutes. The thermostat is connected to the air-conditioning system simply by means of two wires. Three alkaline LR03 1.5V penlight AAA batteries are used to power the unit for more than a year. Once installed the unit is ready for operation according to a standard programme in its permanent memory.

The unit is very easy to programme and can control both heating and cooling systems. It can be installed as a replacement for a previous on/off thermostat.

Description of the icons on the display and function of buttons

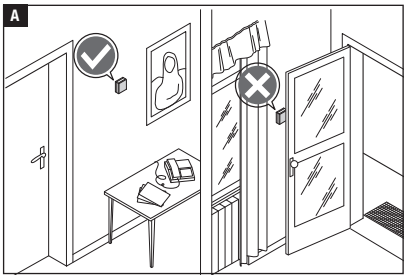


①		Digital clock
②		Days of the week
③	⏻	Control of thermal zone excluded
④		All-purpose programme on
⑤	☼	Cooling mode on
⑥	❄	Heating mode on
⑦		Frost-protection mode on
⑧	ON	Heating or cooling in operation
⑨		Select manual/automatic system control programme
⑩	▽△	Adjust values displayed
⑪	◁ ▷	Select desired time ⑰
⑫	1 7	Select day ②
⑬	C	Copy programming
⑭	◇	Multifunctional button

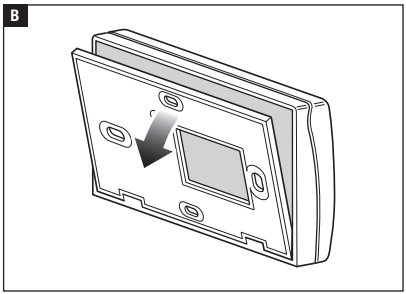
⑮	⏻	Exclude control of thermal zone
⑯		Temperature measured
⑰		Time bands when on.
⑱		Temperature levels
⑲	☼ ❄	Select heating/cooling system mode of operation
⑳	T	Display and programme temperature levels T1, T2, T3. Programme thermal differential.
㉑		Adjust time
㉒	R	Reset button

WARNING. Only clean the thermostat with a soft cloth dampened with water.

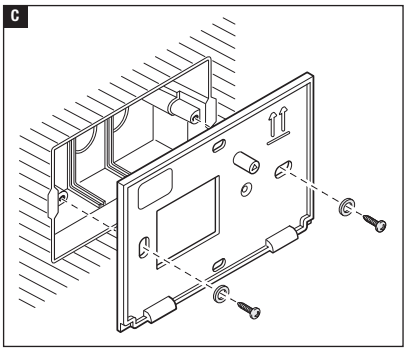
Installation



Install the unit in a position which is suitable for correct room temperature measurement, for example on an internal wall. Avoid installation in alcoves, behind doors or curtains, or near heat sources.

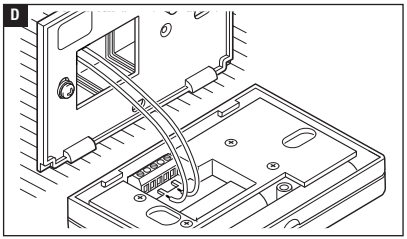


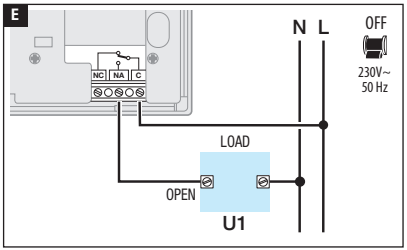
Separate the base from the unit body **B**.

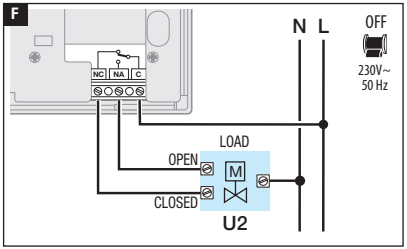


Fasten the base to the wall or to the recessed back-box, passing the connection cables through the opening for this purpose and respecting the sign showing which way is UP **C**.

Note. Do not over-tighten the fixing screws.







Electrical connections

The connections are made according to the type of equipment controlled by the programmable thermostat.

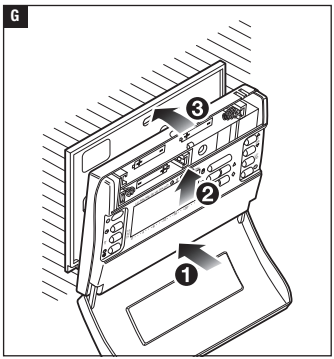
KEY

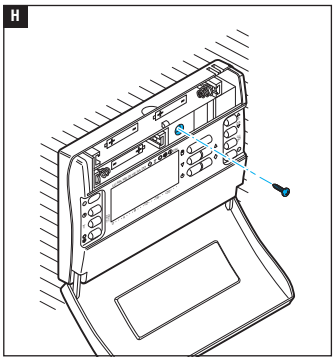
Mains power supply wires
N = neutral
L = live

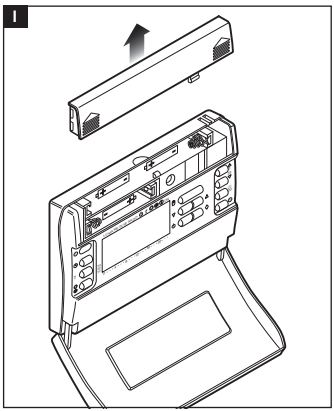
Relay contacts
C = common
NA = normally open contact
NC = normally closed contact

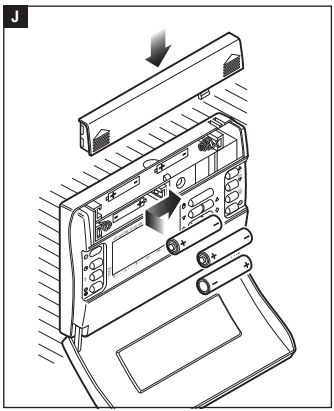
Loads
U1 = burner, circulation pump, solenoid valve, etc.
U2 = motorised valve

NOTE. For connection details, refer to the technical documentation of the device to be controlled.









Hook the device onto the base fixed onto the wall **G** **H**.

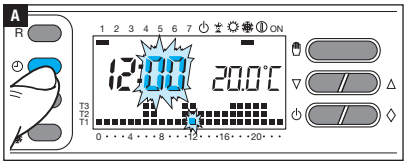
Insert 3 alkaline LR03 penlight AAA 1.5V batteries into the relevant housing. Pay attention to polarity as shown on the bottom of that housing **I** **J**.

⚠ *Inserting the batteries the wrong way round could damage the unit.*

If nothing appears on the display within 30 seconds press the reset button R.

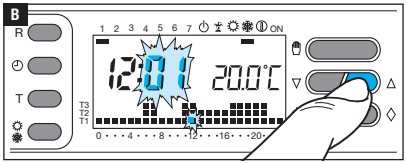
Programming and use of the device

Setting the clock

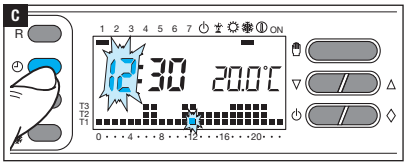


Press button ⏲ **A**.

The minutes digits flash.

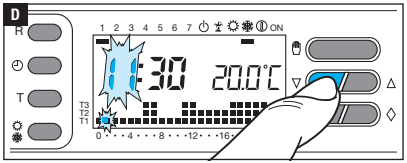


Use buttons ▽△ to set the exact number of minutes **B**.

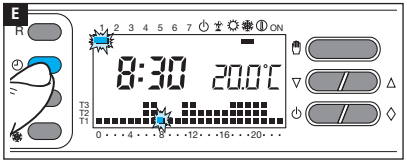


Press button ⏲ **C**.

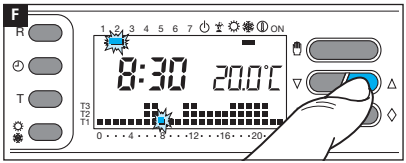
The hours digits flash.



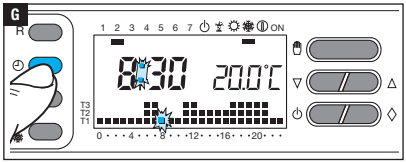
Use buttons ▽△ to set the exact hour **D**.



Press button ⏲ and the day of the week indicator flashes **E**.



Use buttons ▽△ to set the correct day of the week **F**.

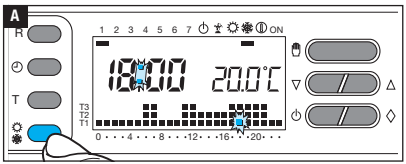


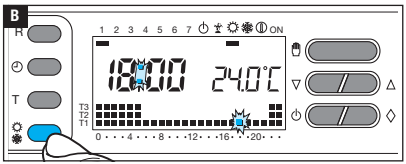
Press button ⏲ to end the procedure **E**.

The colon between the hours and minutes flashes to confirm the operation is complete.

Note. Every time the buttons ▽△ are pressed, the figures on the display go forward one unit. Holding the button down causes the number on the display to scroll slowly for the first 5 seconds, then more quickly. After 10 seconds of inactivity, the unit automatically exits the procedure, storing the last figures set.

Setting operating mode



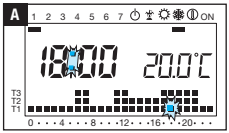


Press button ☼ ❄ to choose the operating mode for the thermal zone.

❄ Heating **A**.

☼ Cooling **B**.

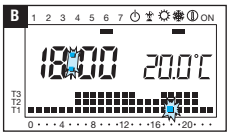
Pre-stored programmes



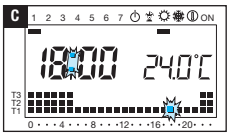
For heating mode

A programme with the temperature trend shown in Figure **A** has been stored for the days from Monday to Friday (1÷5); and one with the trend in Figure **B** for Saturday and Sunday (6 and 7), where the temperature levels set are:

T1 16°C
T2 18°C
T3 20°C



For cooling mode

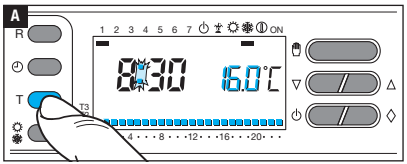


A programme with the temperature trend shown in Figure **C** has been stored, where the temperature levels set are:

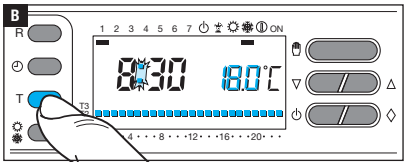
T1 24°C
T2 26°C
T3 28°C

If the programmes in the permanent memory correspond to your requirements the device is ready tor immediate operation.

Displaying the temperature values assigned to T1, T2, T3



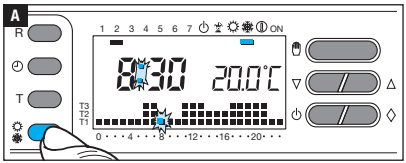
Press button T, to display the temperature value assigned to range T1 **A**.



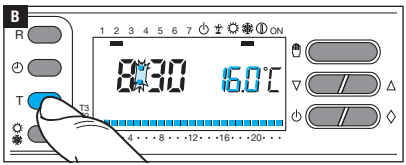
Continue pressing button T to display the values assigned to T2 and T3.

Customising T1, T2 and T3 temperature values

Setting AUTOMATIC operating mode.

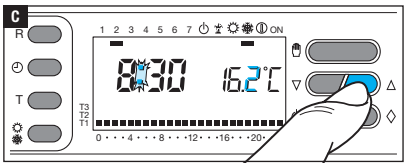


Press button ☼ ❄ to choose whether you want to set values T1, T2, T3 for the heating graphic (❄) or the cooling graphic (☼) **A**.

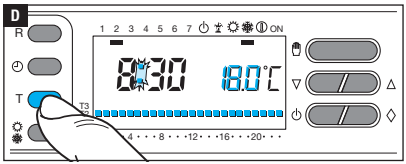


Press button T.

The temperature value assigned to range T1 is displayed **B**.



Use buttons ▽△ to set the desired value for T1 **C**.



Press button T to confirm the temperature value shown on the display and move on to the next temperature level **D**.

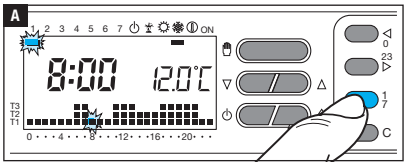
Do this to set all the temperature ranges as you want them.

The entire graphic for the daily programme reappears to confirm that programming of the temperature ranges has been completed.

10 seconds after the last action the unit exits the procedure and accepts as valid the data entered up to that moment.

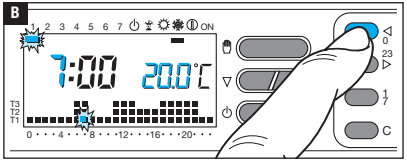
Note. The value that can be assigned to each temperature range is limited by the values of the range immediately above and below. If, for example, range T3 is set at 20°C and range T1 is set at 16°C, the value of range T2 can vary between 16.1°C and 19.9°C; if T2 is set at 21°C T3 is automatically taken up to 21.1°C.

Customising the temperatures for the daily programme



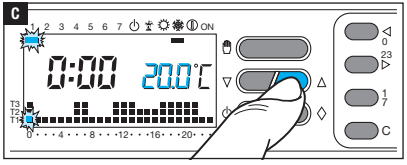
Use buttons 1÷7 to move the day indicator to position 1 (Monday) **A**.

The block relating to the selected day flashes.

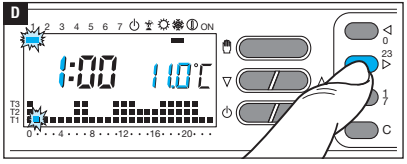


Use buttons ◁ 0÷23 ▷ to move the flashing indicator to hour 0 on the daily programme graphic **B**.

Note. During programming, the clock shows the time indicated by the flashing segment, the colon between hours and minutes does not flash and the temperature icon shows the level selected.

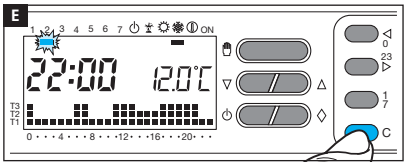


Using buttons ▽△ **C** select the desired temperature range.



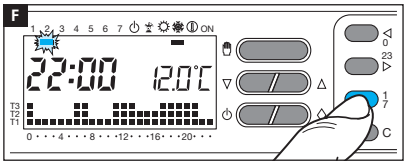
Then press button 0÷23 ▷ to move on to the next time and also select the desired temperature **D**.

Continue in this way until you get to hour 23. Programming for Monday is now complete.



To copy the programme set into other days of the week, press button C **E**.

Continue to press button C to paste the programme into the days shown one by one by the flashing segment.



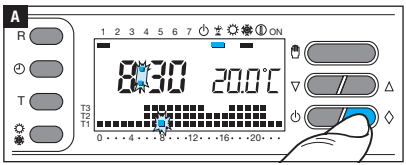
To programme the following days differently, move forward the day using button **1÷7** and repeat the procedure previously described **F**.

Press button ✋ to end programming.

The procedure ends automatically after 10 seconds of inactivity.

Use of the all-purpose programme

The unit includes an all-purpose programme (to be used, for example, when on holiday, etc.) that can be activated at any time of the current day and remain active until 24:00. It can also be pre-requested for use on any day of the week. The factory settings give the all-purpose programme the same profile as that set for Sunday (7), but it can be customised.



Setting AUTOMATIC operating mode.

Press button ◇ **A**.

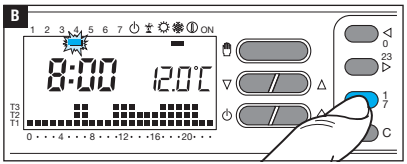
The appearance of the block under the ⏳ icon confirms that the programme has been activated.

The programme can be customised (see "Customising the temperatures for the daily programme" on page 11). At midnight, the device returns to operation in AUTOMATIC operating mode.

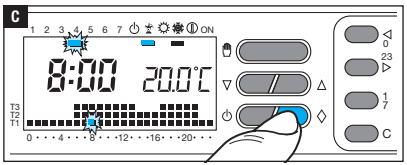
To immediately exit the ALL-PURPOSE programme and return the unit to AUTOMATIC operation, press button ◊ again.

Pre-requesting the all-purpose programme for a set day

Setting AUTOMATIC operating mode.



Use buttons 1÷7 to move the indicator to the position of the day chosen for the programme to be activated **B**.

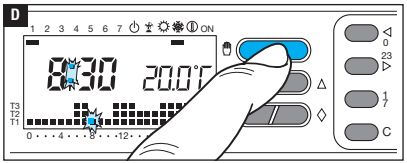


Press button ◊ **C**.

The appearance of the block under the icon confirms that the programme has been activated.

At 0.00 on the selected day, the programme will be run.

The programme can be customised (see "Customising the temperatures for the daily programme" on page 11).



Press button ✋ **D** or wait 10 seconds for the unit to return to AUTOMATIC operating mode.

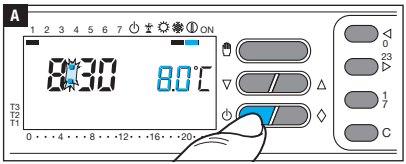
Cancelling the request for the all-purpose programme

Using buttons 1÷7, take the indicator back to the day the all-purpose programme was pre-requested for; press button ◊; the request is cancelled.

Press button ✋ or wait 10 seconds for the machine to return to AUTOMATIC operating mode.

Use of frost-protection programme

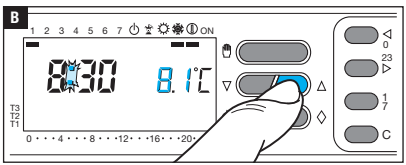
The programme is designed to keep the heating system on at a safe temperature to avoid possible freezing of pipes.



Press button ◊ once. The segment underneath symbol ⏻ confirms that the programme has been activated.

The programme graphic disappears from the display and the pre-set temperature for the frost-protection programme appears for 5 seconds.

After 5 seconds the room temperature measured is shown again.



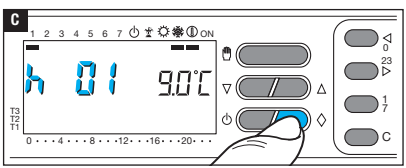
Use buttons ▽△ to set a temperature value between 2°C and 35°C that will be kept constant until new adjustments or until the activation of a different operating programme.

Timed frost-protection programme

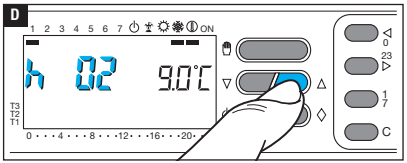
If you want to keep the frost-protection programme on for a pre-set number of hours or days, proceed as follows.

Timed activation

After activating the frost-protection programme as explained above.



Press button ◊ **C**.
In place of the current time, h01 will appear on the display.



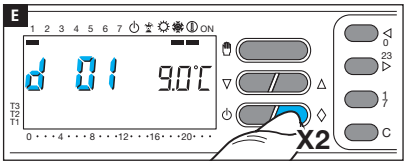
Use buttons ▽△ to set the desired number of hours of activation (from 1 to 99) **D**.

The timed activation begins immediately; the display shows the hours to go until the programme ends. The remaining part of the current hour is counted as 1 hour.

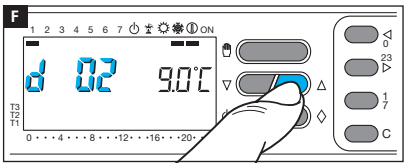
Note. To return to AUTOMATIC operation before the end of the programmed time, press button ✋.

Daily activation

After activating the frost-protection programme as explained above.



Press button ◇ twice **E**. In place of the current time, d01 will appear on the display.



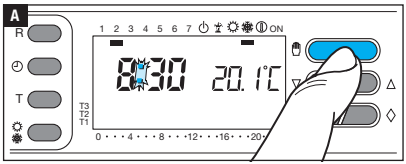
Use buttons ▽△ to set the desired number of days of activation (from 1 to 99) **F**.

The timed activation begins immediately; the display shows the days to go until the programme ends. The remaining part of the current day is counted as 1 day.

Note. To return to AUTOMATIC operation before the programmed period expires press button ✋.

MANUAL temperature control

If you want to adjust the room temperature manually, without changing existing programming, proceed as follows.



Press button ☝ **A**.

Alongside the hour you will see the desired temperature (temperature objective).

Use buttons ▽△ to change the desired temperature value (temperature objective) within a range from 2 to 35°C with variations of 0.1°C.

The temperature set is kept constant until new adjustments are made or a different operating programme is activated.

After about 5 seconds from the last operation, the room temperature appears.

The stored temperature can be checked at any time by pressing button ☝ twice.

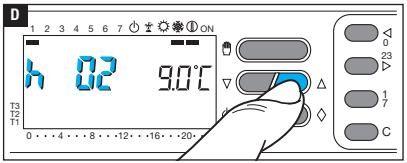
Timed MANUAL temperature control

If you want to keep the temperature stable for a pre-set number of hours or days, proceed as follows.

Timed activation

After activating manual temperature control and setting the desired temperature, as previously described.

Press button ♢ **C**.
In place of the current time, h01 will appear on the display.



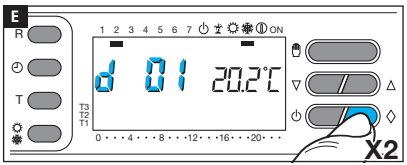
Use buttons ▽△ to set the desired number of hours of activation (from 1 to 99) **D**.

The timed activation begins immediately; the display shows the hours to go until the programme ends. The remaining part of the current hour is counted as 1 hour.

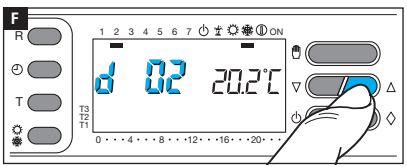
Note. To return to AUTOMATIC operation before the end of the programmed time, press button ☝.

Daily activation

After activating manual temperature control and setting the desired temperature, as previously described.



Press button ◇ twice **E**. In place of the current time, d01 will appear on the display.



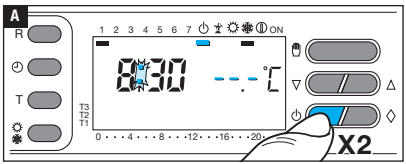
Use buttons ▽△ to set the desired number of days of activation (from 1 to 99) **F**.

The timed activation begins immediately; the display shows the days to go until the programme ends. The remaining part of the current day is counted as 1 day.

Note. To return to AUTOMATIC operation before the programmed period expires press button ☝.

Exclusion of the device from control of the thermal zone

Note: The exclusion procedure shown below is valid for both heating and cooling modes. When this mode is on, the device only operates as a clock-thermometer and does not exercise any control over heating or cooling devices.



Press button ⏻ **twice.**

A block will appear under icon ⏻, which confirms that the device has been excluded from the control of the thermal zone.

The room temperature reading disappears for 5 seconds.

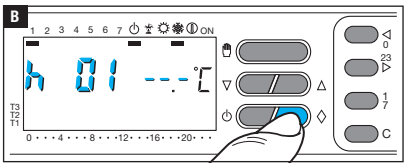
To reset AUTOMATIC operation press either button ⏻ or ✋.

Timed exclusion of device from control of thermal zone

If you want to exclude the device from control of the thermal zone for a pre-set number of hours or days, proceed as follows.

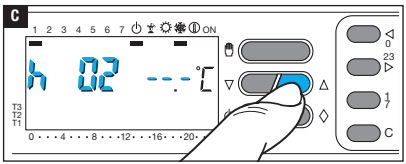
Timed exclusion

After excluding the device from the temperature control of the thermal zone, as described above.



Press button ◊ **B**.

In place of the current time, h01 will appear on the display.



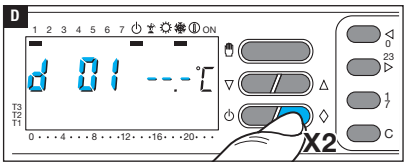
Use buttons ▽△ to set the desired number of hours of exclusion (from 1 to 99) **D**.

The timed exclusion begins immediately; the display shows the hours to go until the programme ends. The remaining part of the current hour is counted as 1 hour.

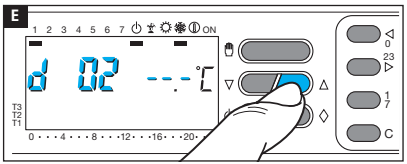
Note. To return to AUTOMATIC operation before the programmed period expires, press either button ⏻ or ✋.

Daily exclusion

After excluding the device from the temperature control of the thermal zone, as described above.



Press button ◇ twice **D**. In place of the current time, d01 will appear on the display.



Use buttons ▽△ to set the desired number of days of exclusion (from 1 to 99) **E**.

The timed exclusion begins immediately; the display shows the days to go until the programme ends. The remaining part of the current day is counted as 1 day.

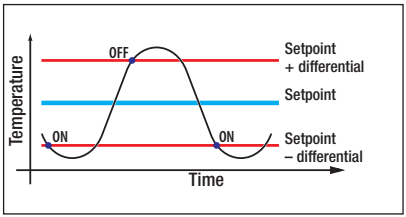
Note. To return to AUTOMATIC operation before the programmed period expires, press either button ⏻ or ✋.

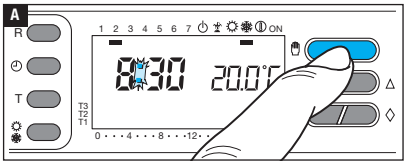
Altering the value of the thermal differential

The factory settings envisage the device operating with a thermal differential of ± 0.2°C.

This thermal differential is suitable for systems with high thermal inertia, for example, systems with cast-iron radiators.

Where the characteristics of the system make it necessary to change this value, proceed as follows.



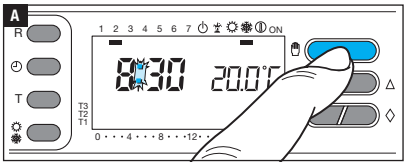


Activate manual operation mode **A**.

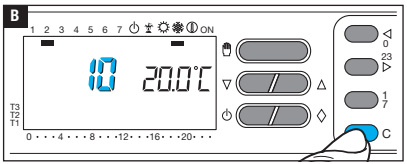
Press button T; on the display, in place of the temperature the thermal differential value will appear **B**.

Use buttons ▽△ to set the desired differential (from ±0.1 to ±0.9) **C**.

Displaying the total system activation time



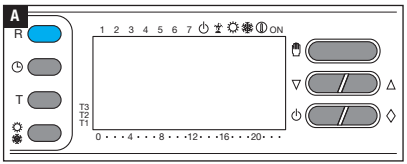
Activate manual operation mode **A**.



Press button C; for 5 seconds, in place of the time, the total system activation time will appear **B**.

To reset the counter to zero and start a new countdown, press button ⏻ during the 5 seconds for which this information is shown.

Resetting the device



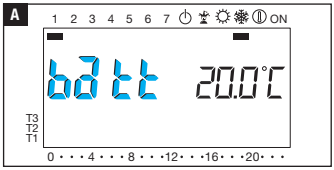
Operational problems, repairs and other technical reasons may make it necessary for the unit to be reset.

Press button R **A**.

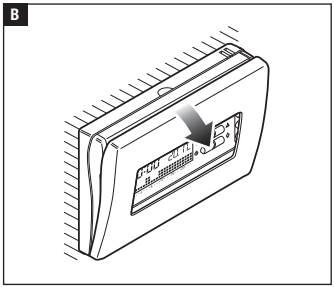
This operation does NOT delete any customised programmes which will be restored, along with other data, as soon as the unit is restarted (see table).

Battery replacement

A



B



The letters batt on the display means that the batteries are flat and must be replaced.

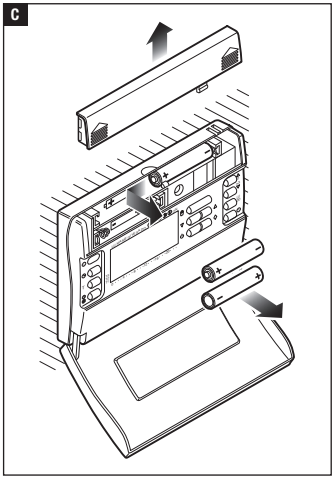
If letters batt alternate with the time, it means that there is about 1 month left to replace the batteries before the unit will cease to operate.

If letters batt are permanently on, the unit is no longer operational and control of the thermal zone is deactivated.

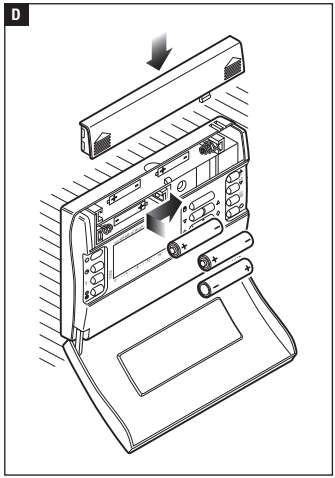
⚠ *Failure to replace the batteries in time may cause damage to the heating system (frost-protection is no longer guaranteed).*

⚠ *Inserting the batteries the wrong way round could damage the unit. The use of flat batteries may cause operating malfunctions.*

C



D



Technical features

- Unit for domestic use.
- Independently installed electronic device.
- LCD graphics display.
- Power supply: 3 alkaline LR03 penlight AAA 1.5V batteries.
- Battery life: more than 1 year.
- Characteristics of relay: max. voltage 250 V, max. current 5 A with resistive load (2 A with inductive load).
- Type of action: 1B-U.
- Available contacts: 1 NA-NC switch contact.
- Range of adjustment: from +2°C to +35°C.
- Room temperature measuring interval: 15 seconds.
- Reading resolution: 0.1°C.
- Precision: ≤ ±0,3°C.
- Class A software.
- Degree of pollution: 2.
- Impulse voltage: 4 kV.
- Displayed reading range: from 0°C to +40°C.
- Maximum control unit temperature: 40°C.
- Protection rating: IP30.
- Operating temperature: from 0°C to +40°C.
- Dimensions: 116x80x21.

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