Cronotermostato Digitale

TUO GSM

Manuale d'Uso

User Manual
DIGITAL CHRONOTHERMOSTAT

vemer SPA

PDF

Index

GSM wall-mounting chronothermostat powered by mains (230 V~), suitable for the control of heating and air-conditioning systems.

The device, through the bistable relay, acts on the control circuit of the burner or the circulation pump (heating), or on the control circuit of the air conditioner (conditioning), in order to guarantee the desired temperature.

The integrated GSM module allows the remote control of the device via your smartphone or tablet. It is sufficient to insert a SIM card enabled for telephone traffic in the appropriate slot: the remote control occurs by sending to the device certain types of SMS messages, described in this user manual.

Security is guaranteed by the fact that the command messages are interpreted by the device only if the sender number is saved in the device address book or if they are accompanied by the SMS protection password.
Every time the device receives a valid command, after executing it, it sends a confirmation message to the sender.

It is also available an app for iOS or Android devices that allows you to control the device without having to manually write the text of the command messages.

The device also displays the relative humidity value thanks to the built-in probe.

The colour of the display backlighting can be chosen by the user among the 48 selectable shades. You can even set the backlighting to be variable according to the difference between the measured temperature and the set one.
The backlighting can be always switched off if the device is installed for example in bedrooms.

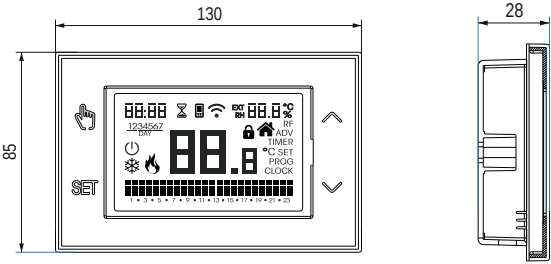
Code	Model	Description
VE771800	Tuo GSM Bianco	Weekly chronothermostat white colour
VE771900	Tuo GSM Nero	Weekly chronothermostat black colour

SAFETY WARNINGS

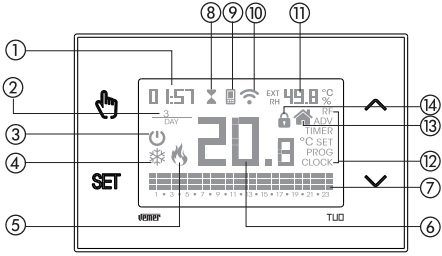
■ **During installation and operation of the product, it is necessary to comply with the following instructions:**

1) The device must be installed by a skilled person, in strict compliance with the connection diagrams.
2) Do not power on or connect the device if any part of it is damaged.
3) After installation, inaccessibility to the connection terminals without appropriate tools must be guaranteed.
4) The device must be installed and activated in compliance with current electric systems standards.
5) Before accessing the connection terminals, verify that the leads are not live.
6) In the electrical system of the building where the device must be installed, a protection device from the overcurrents must be present.
7) The device performs actions of 1B type and is suitable for environments with pollution degree 2 and overvoltage category III (EN 60730-1).

DIMENSIONS



DEVICE DESCRIPTION



① Clock
② Day of the week
③ Off operation
④ Active load (conditioning mode)
⑤ Active load (heating mode)
⑥ Measured temperature
⑦ Running daily program divided into 24 histograms, one for each hour of the day. Each hour is associated with one of the 3 temperatures:

■ Temperature **T1** ■ Temperature **T2** ■ Temperature **T3**

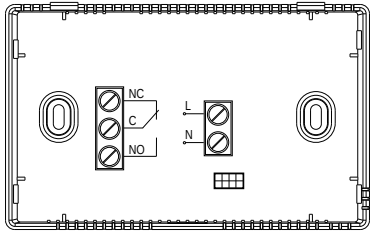
⑧ Active timed operation
⑨ Receiving a command in progress
⑩ Connection to the active GSM network
⑪ Measured relative humidity
⑫ Configuration menu:

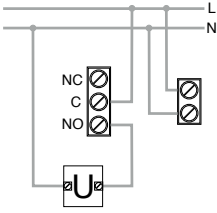
- **RF** (not used)
- **ADV** advanced parameters of the device
- **TIMER** timings
- **SET** automatic operating temperatures T1, T2, T3
- **PROG** automatic operating programs
- **CLOCK** date and time

⑬ (not used)

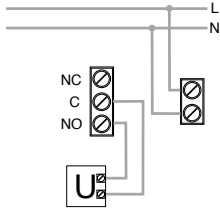
⑭ Active keypad lock

CONNECTION DIAGRAM





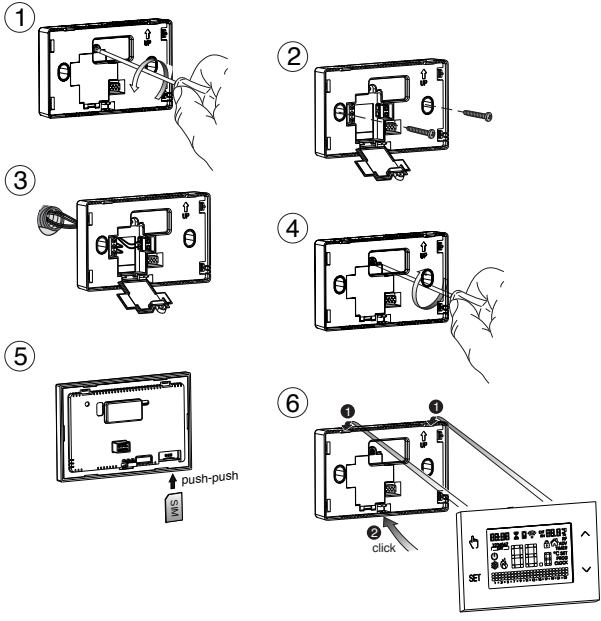
Connection diagram for the supply of circulation pumps, solenoid valves, etc. at 230V ~



Connection diagram for the control of the boiler, heat pumps, etc.

Device installation

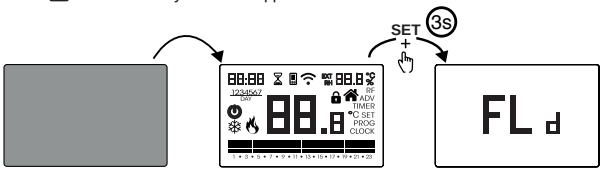
The device can be installed on the wall or to cover the 3-module flush-mounting box (type 503).
We recommend positioning at a height of 1.5 meters from the floor, in an area that respects as much as possible the average temperature conditions of the entire environment. Make sure the area is covered by the GSM signal to guarantee a stable communication. In this regard, the device allows verifying the intensity of the signal of each operator (see page 47).
Avoid installation near doors or windows, in niches, behind doors and curtains or in positions with excess or total lack of ventilation, to avoid that the reading of the temperature measured by the probe is in some way offset.



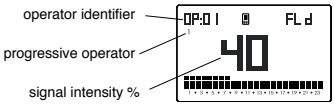
Check the signal quality of telephone operators

The device allows you to check the GSM signal strength of each operator to allow you to choose one that guarantees good coverage.

To check the GSM signal strength, proceed as follows:
1. make sure that no SIM card is inserted in the appropriate slot
2. power the device: when the display shows all the segments on, press the keys SET and ☜ simultaneously until FLd appears.



After a few moments (at maximum one minute) the display will show the identifier of the first operator detected with the relative intensity:



Identifier (MNC)	Operator
1 - 43 - 48	Tim
10 - 06	Vodafone
88 - 44	Wind
99 - 33	3
50	Iliad

3. press the keys ⌃ and ⌄ to scan the detected telephone operators and display the intensity of each one. The device displays the signals of 5 operators at maximum.
4. to exit the function, press the keys SET and ☜ simultaneously until rES appears

SIM card requirements

Use a SIM card of mini SIM type. Make sure that the PIN request, the voice mail and any call forwarding are disabled. To disable the PIN request or the voice mail, insert the SIM in a smartphone and proceed accordingly.

The status of the connection to the GSM network is indicated as follows:
on fixed: connected to the GSM network
on flashing: SIM card not inserted, GSM network missing/searching

DEVICE REMOTE CONTROL

Once properly installed and powered, the device can be remotely controlled by sending simple SMS messages.

For this to be possible, the sender of the command (SMS) must be registered on your TUO GSM device.

It is also possible to send commands without being registered: in this case, however, it is necessary to know the SMS commands protection password.

However, it is advisable to register at least one number in the phonebook.
This is because the device allows you to report any alarm situations (power failure or exceeding a preset temperature) and, if they occur, it does so by sending an SMS to one or more numbers saved in your phonebook.

On pages from 49 to 58 is described the procedure to memorize one or more numbers in the phonebook of TUO GSM and the commands to be sent to control it.

GENERAL NOTES

A command SMS is structured as follows:
[password] [command] [parameter 1] … [parameter n]

- the words must be separated by one or more empty spaces
- the password can be omitted if the sender of the command is stored in the phonebook
- it is possible to link several commands in a single message up to a maximum of three
- to insert numbers with decimal part (ex. 12.6) the separator must be the point (and not the comma)
- it is possible to write indifferently in lower case or upper case

If the command is correct, the sender receives a reply sms, whose structure is similar to the command itself, with the addition of the symbol "=" to indicate the current status.

Store a number in the device phonebook

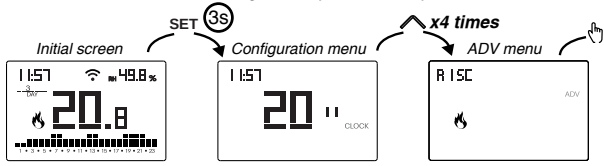
The device allows you to store up to 5 numbers in your phonebook. A number saved in the phonebook can:

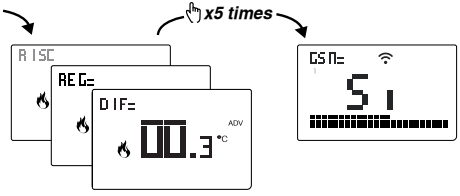
- send command messages without having to enter the protection password
- receive messages from the device in the event of alarm situations
- switch the device on or off via telephone calls (rings)

There are two ways to store a number in the phonebook: by call or by SMS command. However, the first number in the phonebook must be memorized via a telephone call, following the procedure described below.

• Store the first number in the phonebook

1. go to the GSM screen of the ADV menu
2. the indication 1 flashes indicating the first position of the phonebook





3. make a call to the device with the number to be registered.
   When the call is received, the symbol lights up on the display
4. At the end of the call:
   a. the number indicating the position of the phonebook stops flashing
   b. the user who made the call receives a confirmation message of the type:
      PHONEBOOK 1=number 2=empty 3=empty 4=empty 5=empty

5. press the key SET twice to exit the GSM screen

• Store the other numbers by phone call

1. go to the GSM screen of the ADV menu
   (as described in the procedure for registering the first number)
2. the number 1 indicating the first position of the phonebook is fixed:
   press the key ☝ until it starts flashing
3. press the keys ∧ or ∨ to select another position in the phonebook
   among the other 4 available
4. make a call to the device with the number to be registered.
   When the call is received, the symbol 📱 lights up on the display
5. At the end of the call:
   a. the number indicating the position of the phonebook stops flashing
   b. the user who made the call receives a confirmation message
6. repeat this procedure to register the other numbers as well.
   At the end press the key SET twice to exit the GSM screen

• Store the other numbers via SMS

Send the command to the device:

PHONEBOOK [index] [number]

[index] is the position of the phonebook where to store the number
[number] is the phone number to be added

Note: remember that if the sender's number is not present in the phonebook, the password must also be entered.

For example:
PHONEBOOK 2 333111222 : adds the number 333111222 to position 2
PHONEBOOK 2 333111222 5 333111223 : adds the number 333111222 to position 2 and number 333111223 to position 5

The device replies to the sender with a sms indicating the complete phonebook (if a phonebook position is not occupied, it is indicated with EMPTY).

To view the complete phonebook use the command PHONEBOOK without any parameter.

To **delete a number from the phonebook** use the parameter EMPTY.
For example:
PHONEBOOK 2 EMPTY: delete the number stored in position 2.

Set the operating mode

Use the following commands to set automatic, manual or off operation:

CRONO ON AUTOMATIC *[timing] [d/h]*
CRONO ON MANUAL *[timing] [d/h]*
CRONO OFF *[timing] [d/h]*

[timing] and *[d/h]* are optional parameters. When not specified, the set status is maintained until further command.

[timing] is a numeric value from 1 to 99
[d/h] is the unit of measurement: *D = days*, *H = hours*

The description of the timings and their operation is shown on page. 67.

For example:

CRONO ON AUTOMATIC: sets the automatic operation

CRONO ON AUTOMATIC 20 H: sets the automatic operation for 20 hours, after which the operation will be switched off

CRONO OFF 2 D: sets the operation off for 2 days, after which the automatic or manual operation is activated (depending on which was the operation set before activating off operation).

Set the operating mode

To configure the device for heating (winter) or air conditioning (summer) use the commands:

CRONO HEATING
CRONO COOLING

Set the temperature T0 (off mode)

To set the temperature value T0 use the following command:

T0 [value]

[value] is a numeric value from 1.0 to 50.0 or DISABLED

For example:
T0 4.5 : set the temperature T0 to 4.5°C
T0 7 : set the temperature T0 to 7°C
T0 DISABLED: deactivates the antifreeze temperature.

Note: by deactivating the antifreeze temperature, when the off mode is set, no minimum temperature is guaranteed with the consequent risk of system freezing.

Set the temperature Tm (manual mode)

To set the temperature value Tm use the following command:

Tm [value]

[value] is a numeric value from 2.0 to 50.0

For example:
Tm 18.5: set the temperature Tm to 18.5°C

Set temperatures T1, T2, T3 (automatic mode)

To set the temperature values T1, T2 and T3 use the following commands:

T1 [value]
T2 [value]
T3 [value]

[value] is a numeric value from 2.0 to 50.0

Note: the condition T1<=T2<=T3 must be respected

For example:
T1 6.0: set the temperature T1 to 6°C
T3 21.8: sets the temperature T3 to 21.8°C

Set date and time

In normal conditions, when a SIM card is inserted in the device, the synchronization of the date and time occurs automatically after a couple of minutes from the connection to the GSM network. However, this function is not guaranteed by all telephone operators. In the latter case, the date and time can also be set remotely in two ways.

• Automatically
In this case it is necessary to communicate to the device the number of the inserted SIM card using the command:

CRONO NUMBER [number]

[number] is the number of the SIM card inserted inside TUO GSM

In this case, the device, upon return of the power supply and if date and time had been lost (for example due to a prolonged blackout), sends a message to itself from which to acquire the necessary data.

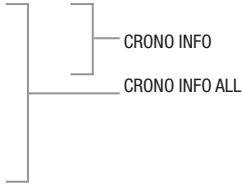
• Manually
If the automatic mode is not active (that is, the number of the SIM card inserted with the command described above has not been specified to the device), after receiving the message of power supply reset, synchronize the time remotely using the command:

CLOCK

Request of information on the system status

To receive information from the device relating to:

- measured temperature
- measured relative humidity
- mode and set operating mode
- current temperature used as setpoint
- relay status
- presence of the power supply
- GSM signal coverage
- SIM card number in the device



use the commands

CRONO INFO ALL

CRONO INFO

System operating hours request

To find out the total hours of operation of the system connected to the relay, use the command:

COUNTER

To reset the counter, use the command:

COUNTER RESET

Signaling of possible alarm conditions

The device can signal the following particular conditions (alarm conditions), by sending a sms to one or more numbers stored in your phonebook:

- if the measured temperature falls below a specified value
- if the measured temperature exceeds a specified value
- if the power supply fails (for example in the event of a blackout)

To activate this feature, you need to:

- specify the minimum temperature below which the alarm is triggered
- specify the maximum temperature above which the alarm is triggered
- define for each type of alarm what are the numbers in the phonebook that should receive the alert

To define the alarm on exceeding the minimum temperature:

SET ALARM MINIMUM INT [threshold] [hysteresis] [delay]

[threshold] = is the temperature value below which an alarm is considered.
[hysteresis] = is the value used to calculate the condition of re-entry from the alarm. When the measured temperature drops below the value *threshold + hysteresis* the device sends the alarm re-entry alarm message to the recipient
[delay] = is a value (expressed in minutes). Indicates how many minutes after the threshold it can be considered an alarm.

To define the alarm on exceeding the maximum temperature:

SET ALARM MAXIMUM INT [threshold] [hysteresis] [delay]

[threshold] = is the temperature value above which an alarm is considered.
[hysteresis] = is the value used to calculate the condition of re-entry from the alarm. When the measured temperature exceeds the value *threshold-hysteresis* the device sends the alarm re-entry message to the recipients.
[delay] = is a value (expressed in minutes). Indicates how many minutes after the threshold it can be considered an alarm.

To define the recipients of the alarms:

SEND ALARM MAXIMUM [index] .... [index]
SEND ALARM MAXIMUM [index] .... [index]
SEND ALARM POWER [index] .... [index]

[index] = is the position in the phonebook of the number to which to send the alarm SMS

For example:
SEND ALARM MAXIMUM 2 4
when a maximum alarm occurs, the device sends a message to the numbers saved in the phonebook in position 2 and 4.

SEND ALARM MINIMUM 1 2 3
when a minimum alarm occurs, the device sends a message to the numbers saved in the phonebook in position 1, 2 and 3.

SEND ALARM POWER 1
when a power failure occurs, the device sends a message to the number saved in the phonebook in position 1.

Note: a new recipient configuration overwrites the previous one. For this it is necessary all recipients must be entered in a single command.
For example, after sending the following two messages:
SEND ALARM MAXIMUM 2 4
SEND ALARM MAXIMUM 3
the device sends the maximum alarm only to the recipient 3 (thus canceling the recipients 2 and 4).

To ensure that no message is sent in the event of an alarm, use the commands:

SEND ALARM MINIMUM EMPTY
SEND ALARM MAXIMUM EMPTY
SEND ALARM POWER EMPTY

Re-addressing of unrecognized messages

When the device receives a message that is not recognized as a valid command, it sends it to one of the numbers in its phonebook.
This function can be useful for example when the telephone operator of SIM card inserted in the device sends a message to signal the approaching of the expiration or the exhaustion of the credit.

By default the setting requires these messages to be redirected to the number saved in position 1 of the phonebook.

To change the recipient of these re-addressed messages, use the command:

FORWARD [index]

[index] is the index of the device phonebook (1, 2, 3, 4 or 5)

For example:
FORWARD 3: sends unrecognized messages to the phonebook number saved in position 3

To disable the forwarding function use the command:

FORWARD NONE

Changing the message password protection

For security reasons, the device accepts commands only if their sender is a number stored in the phonebook.

However, it is possible to send commands to the device even from users that are not among those stored in the phonebook.
In this case, however, it is necessary to enter the correct password before the command (it is 1234 by default). For example:

CRONO HEATING
is a command executed only if sent by a number stored in the phonebook

1234 CRONO HEATING
is a command executed even if sent by a number not stored in the phonebook

It is recommended to change the password to ensure greater protection.
To change the password use the command:

PASSWORD [new password]

[new password] is a 4-digit number

For example:
PASSWORD 2276: changes the protection password to 2276.

Command with telephone call (ring)

The numbers saved in the phonebook can change the operating mode of the device simply by making a telephone ring.
After a ring the device behaves as follows:

- if it is in automatic mode it activates off operation
- if it is in manual mode, it activates off operation
- if it is in off mode it activates automatic or manual operation, depending on which operation was active before switching off

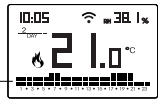
  The number of the phonebook that made the call will receive an informative text message on the status of the chronothermostat.

OPERATING MODE

The device can operate according to the following 3 modes:

Automatic mode

It allows you to use the device as a chronothermostat and the temperature regulation follows the "profile" of the set program.
The program profile assigns one of the 3 temperatures T1, T2 or T3 to each hour of the day.
It is possible to assign a different program to each day of the week.



In the example, the device adjusts the temperature based on the value of:
T2 from 00:00 to 6:00 and from 8:00 to 17:00
T3 from 6:00 to 8:00 and from 17:00 to 21:00
T1 from 21:00 to 24:00
The values of T1, T2 and T3 can be set by the user.

Manual mode

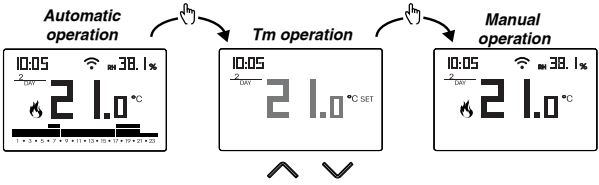
It allows you to use the device as a thermostat and the regulation is carried out according to the temperature Tm.

Off mode

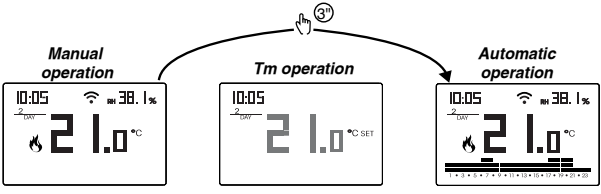
It is suitable when long periods of absence are expected. In this mode the device does not perform any regulation however, if it works in heating mode, it maintains a minimum temperature (antifreeze temperature) to prevent possible freezing of the system.

English

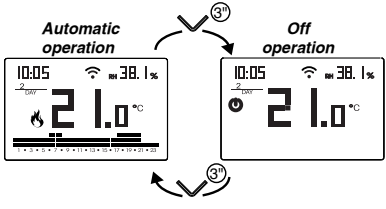
To switch from automatic to manual operation



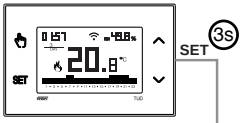
To switch from manual to automatic operation

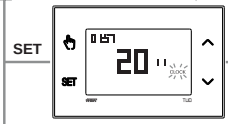


To switch from automatic operation (or manual) to the one switched off and vice versa

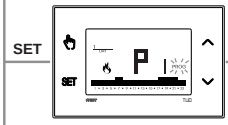


CONFIGURATION MENU DESCRIPTION

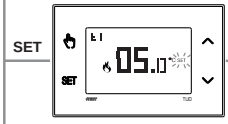




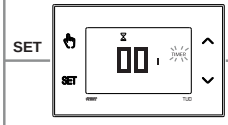
The CLOCK menu allows you to set date and time. It also allows the configuration of the daylight saving time change.



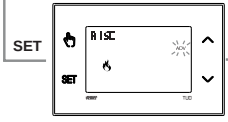
The PROG menu allows you to change the programming of the automatic operating mode.



The SET menu allows you to modify of the values of the 3 temperatures of the automatic operation (T1, T2, T3).



The TIMER menu allows setting of one of the 3 timed operations.

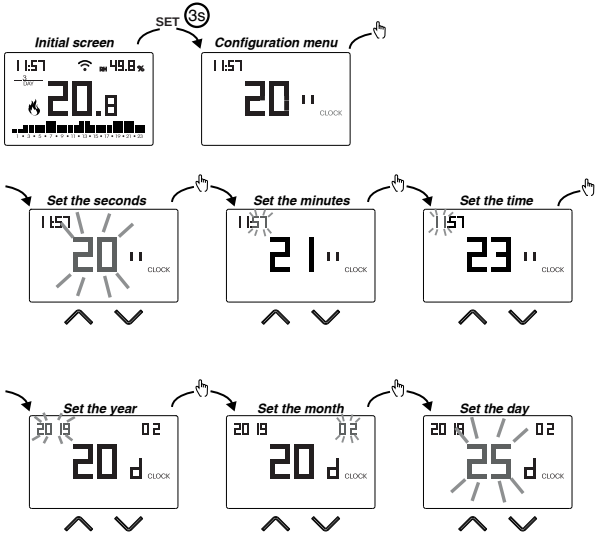


The ADV menu allows you to configure the general operating parameters of the device.

English

CLOCK MENU - DATE AND TIME SETTING

Access the clock menu to set the date and time and to configure time change from summer time to winter time and vice versa.



To exit the date and time setting:

- press the key SET once to return to the configuration menu
- press the key SET twice to exit the menu and return to the initial screen
- to change the settings of the summer/winter time change, press and hold for a long time the key (see "Configuration of the summer/winter time change")

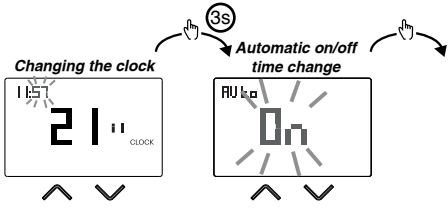
Configuration of the summer / winter time change

You can configure the device to independently manage the summer time update.
The factory setting includes:

- the passage winter time → summer time (+1h) the last Sunday of March at 2:00 o'clock
- the passage summer time → winter time (-1h) the last Sunday of October at 3:00 o' clock

To change the configuration of the summer/winter time change:

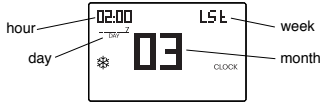
- when changing any of the clock parameters (seconds, minutes, hour, year, month or day), keep the key pressed for a long time until the display shows AUto



If the function is enabled (AUTO ON), for each time change it is necessary to set:

- the day of the week (1= Monday...,7= Sunday)
- the week of the month (1st= first, 2nd= second,...LSt= last)
- the month of the year
- time

using the keys and to set the value and the key to confirm and move on to the next parameter.



To exit the summer/winter time change configuration:

- press the key SET once to return to the configuration menu
- press the key SET twice to exit the menu

Note: the winter time change → summer time is identified by the symbol ❄.
the summer time change → winter time is identified by the symbol 🔥.

For example, in Italy the summer time starts the last (LST) Sunday (7) of March (03) at 2:00 o' clock and the last (LST) Sunday (7) of October (10) at 3:00 o' clock.

PROG MENU - PROGRAMS SETTING

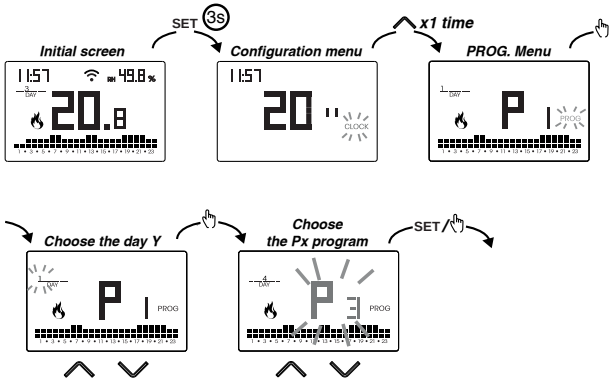
Access the PROG menu to change the programming of the automatic operation.
The factory setting includes:

- the P1 program from Monday to Friday
- the P2 program on Saturday and Sunday

If this program is not suitable for your needs, you can:

- assign a different program for one or more days of the week
- modify one or more existing programs by personalizing the profile, that is, assigning different temperature levels for one or more hours of the day.

How to choose a different program for the day Y



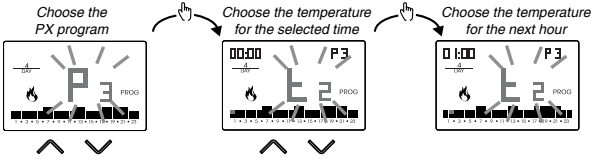
If the program meets the needs:

- press the key [SET] once to confirm and choose another day to which to assign a different program
- press the key [SET] twice to return to the configuration menu
- press the key [SET] three times to exit the menu and return to the initial screen

If no program meets the needs:

- choose the one that is closest to your needs and press the key [☝] to customize the profile (see "How to customize the profile of a Px program")

How to customize the profile of a Px program



- starting from midnight 00:00, press the keys ^ and v to assign to each hour of the day one of the 3 possible temperatures (T1, T2, T3) and the key ☝ to confirm and go to the next hour.

- to enter a switching delay for the selected hour, hold down the key ☝ for a long time.
  For more information about switching delay, see "How the switching delay works"

When the profile program is suitable for your needs:
- press the key SET to exit the customization.

How the switching delay works

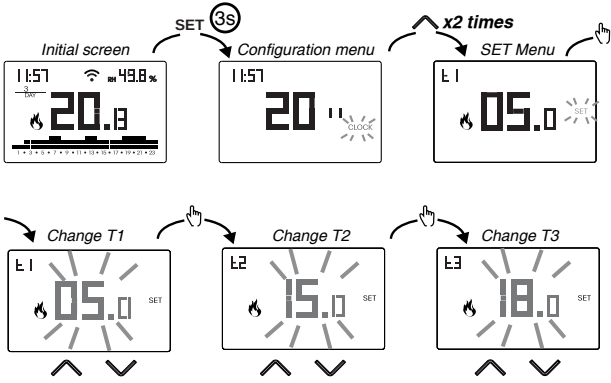
Set a switching delay for a specific hour
to maintain, for the duration of the delay, the temperature value
assigned to the previous hour.
For example, if the program includes:
T2 from 12 to 13
T3 from 13 to 14 pm with 30 minutes delay
the chronothermostat adjusts the temperature based on the value of
T2 from 12 to 13.30 and
T3 from 13.30 to 14.00
It is possible to set delays of 15, 30, 45 minutes,
independent for every hour of the day.

SET MENU - TEMPERATURES T1, T2, T3 SETTING

Access the SET menu to change the values of the 3 temperatures used in automatic operation. The factory setting includes:

- T1 = 5°C, T2 = 15°C, T3 = 18°C (heating/winter operation 🔥)
- T1 = off, T2 = 23°C, T3 = 25°C (conditioning/summer operation ❄)

How to change the temperature values T1/ T2/ T3



To exit the temperatures change:

- press the key SET once to return to the configuration menu
- press the key SET twice to exit the menu and return to the initial screen

Note: temperature values between LO (minimum value) and HI (maximum value) are allowed.
These factory values are: LO = 2°C, HI = 50°C but can be modified through the ADV menu.

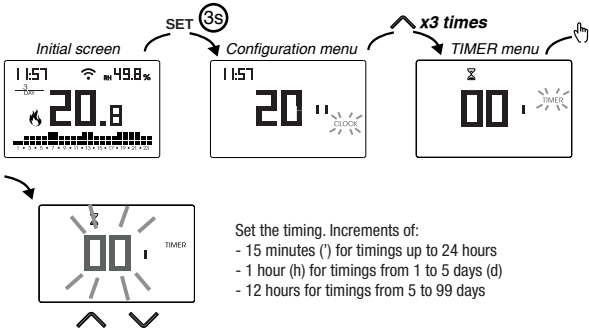
Note: the condition T1 ≤ T2 ≤ T3 must be respected.

TIMER MENU - TIMING SETTING

Set a timing to prolong the current operation for the duration of the timing itself. There are 3 timings available:

- **Timed manual:** set a timing during manual operation to maintain this operation until timing has elapsed.
  At the end of the timing, the device activates the automatic operation.
- **Timed automatic:** set a timing during the automatic operation to maintain this operation until the timing has elapsed.
  At the end of the timing, the device activates the off operation
- **Off timed:** set a timing during off operation to maintain this operation until timing has elapsed. At the end of the timing, the device activates automatic or manual operation, depending on which operation was active before switching off.

How to set a timing



Set the timing. Increments of:
- 15 minutes (') for timings up to 24 hours
- 1 hour (h) for timings from 1 to 5 days (d)
- 12 hours for timings from 5 to 99 days

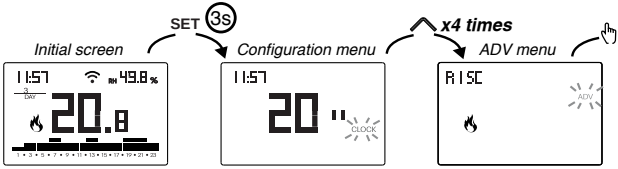
To exit the timing change:

- press the key SET once to return to the configuration menu
- press the key SET twice to exit the menu and return to the initial screen

When a timing is in progress, the symbol ⧗ is lit.

Note: to cancel a timing in progress or to exit without activating the timer, set 00'.
Note: the timing ends in the case of changes to the operating mode.

ADV MENU - ADVANCED PARAMETERS SETTING



In the ADV menu, the parameters related to the advanced configuration of the device are proposed in sequence. Press:

- the keys ⌃ and ⌄ to change the value of the selected parameter
- the key ☝ to go to the next parameter
- the key SET to exit and confirm the changes

Note: the device exits the menu after about 40 seconds without any key being pressed.

Operating mode

Setting up:
- r ISc if the device is connected to a heating system (winter operation)
- cond if the device is connected to an air conditioning system (summer operation)

Factory value: r ISc (heating).

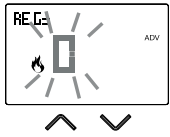
Type of regulation

(this menu is active only if operating mode = heating)

Setting up:

- to choose on/off regulation.
- to choose proportional regulation.

Factory value: (on/off).



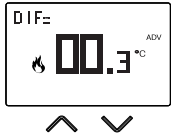
Note: the on/off regulation is suitable for most home situations.
Therefore it is advisable to modify this parameter only in case of real need.
For more information on the characteristics of the on/off and proportional regulation logic, see "Regulation types" on page. 76.

Parameters for the regulation type

(this menu varies depending on the chosen regulation type)

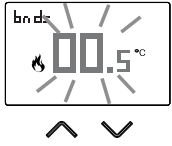
If the chosen regulation type is on/off, set the differential . Allowed values: 0.1°C ÷ 1°C.

Factory value: 0.3 °C

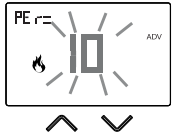


If the chosen regulation type is proportional, set the band and the period . Allowed values: 0.5°C ÷ 5°C (band), 10, 20 or 30 minutes (period).

Factory value: 0.5 °C (band), 10 minutes (period).



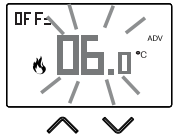
For more information on the parameters of the regulation logics, see "Regulation types" on page 76.



English

Antifreeze temperature

(this menu is active only if operating mode = heating)



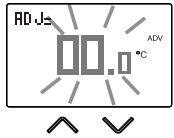
The antifreeze temperature avoids the risk of freezing of the system when on the chronothermostat is set the off operation ⏻.

Allowed values: --- (excluded), 1°C ÷ 50°C .

Factory value: 6 °C.

Note: the "---" setting excludes the antifreeze function; in this case, when the device is off, no minimum temperature is guaranteed

Adjustment of the measured temperature



In particular installation conditions, it can happen that the temperature measured by the device deviates from the average temperature present in the room. In this case, introduce an adjustment temperature with the ADJ menu.

Allowed values: -5°C ÷ 5°C .

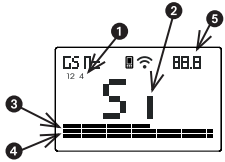
Factory value: 0 °C.

Note: the temperature value shown on the display during normal operation is inclusive of any adjustment introduced.

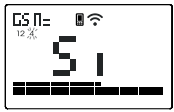
GSM connection configuration

This menu displays the following information:

- the occupied positions of the phonebook (1)
- the presence of the GSM field (2), with GSM signal level (3) on the total available (4)
- the indication of the type of error (in case it is present a malfunction) (5)



From this menu it is also possible to check if a phone number is present in the phonebook and, possibly, in which position.
Simply make a call to device with the number you want to check: if the number is present in the phonebook, the corresponding memory index will start flashing (in the example to the side, the number is present in position 4).

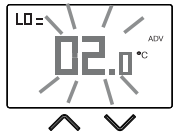


Minimum/Maximum settable temperature

Under particular installation conditions, for example in public buildings, hotels, etc., it may be useful to limit the range of values that the temperatures T1 / T2 / T3 and Tm can assume, in order to prevent incorrect settings by the user.

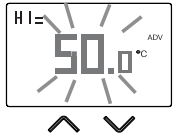
- LO is the lower limit

  Allowed values: 2°C ÷ HI
  Factory value: 2°C



- HI is the upper limit

  Allowed values: LO ÷ 50°C
  Factory value: 50°C

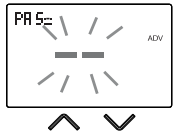


Password for key lock

Under particular installation conditions, for example in public buildings, hotels, etc., it may be necessary to lock the keypad to prevent changes to the settings by unauthorized persons.

To activate the keypad lock,
set a password between 001 and 999.

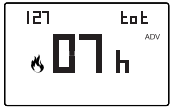
To deactivate the lock, keep the key ☑
pressed until you set "- - ".



When the keypad lock is active, the symbol 🔒 appears on the display and, after pressing a key, the word bLOc appears.
To find out how to unlock the keypad, see page 74.

Hour meter of system operation

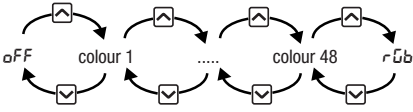
It displays the operating hours of the system (relay contacts on C-NA).



The device has two counters (5-digit) independent for heating operation and for the conditioning operation, but is displayed only the counter of the selected operation mode.
To reset the counter, keep the key pressed for a long time during the viewing.
The maximum count is 65535h (about 7 years), when this digit is reached, the counter resumes the count from 0h.

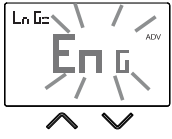
Display backlighting

The display backlighting can be:
- off (blue after pressing a key)
- fixed of a colour that can be chosen among 48 variants
- variable based on the difference between the measured temperature and the set temperature:
  - blue when the measured temperature is lower than the set temperature of at least 0.5°C (and after pressing a key)
  - green when the difference between the measured temperature and the set one is lower than 0.5°C (and in case of operation off)
  - red when the measured temperature is higher than the set temperature of at least 0.5 ° C



The backlighting can also be activated/deactivated from the initial screen by keeping the key pressed for a long time.

Language selection

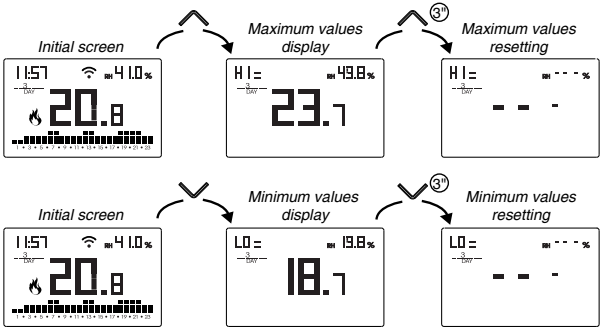


3 languages are available: Italian, English, Spanish.
The syntax of the sms commands to send differs according to the set language.

OTHER FUNCTIONS OF THE DEVICE

Display of minimum/maximum daily temperature

The device stores the values of the temperature and of the minimum and maximum humidity measured during the day.



Display of relative humidity

The device displays the humidity value measured by the probe with a resolution of 0.1 % RH.

Humidity regulation is not possible.

Keypad unlock

When the key lock is active, the device adjusts the temperature using the set programming. In this condition, after pressing a key, the display shows the writing "bLOc"
To unlock the keypad:

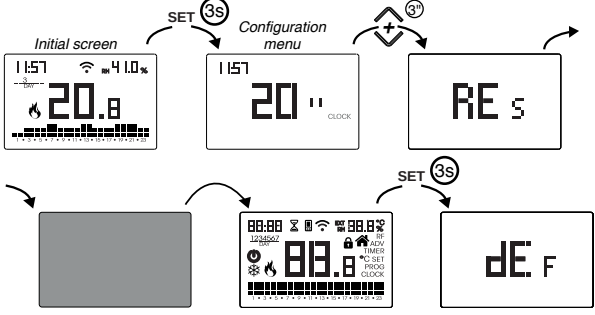
1. While displaying the writing "bLOc" hold down any of the 4 keys for a long time until the display shows "---".
2. Enter the correct password using the keys ^ and v and confirm with the key ☝.
   The keypad remains unlocked for about 45 seconds from the last press of a key, after which the keypad reactivates the lock. To remove the key lock, see p. 72.

DEVICE RESET

Perform a reset to cancel the settings made and bring the device back to the conditions in which it appears as soon as it has been removed from the packaging.

To reset:

1. from the initial screen, press and hold the key SET to enter the configuration menu. The CLOCK indication flashes.
2. press and hold down the keys ∧ and ∨ simultaneously until "rES" appears on the display.
3. when the display shows all the segments, keep the key SET pressed until "dEF" appears



⚠ To reset if the key lock is active and you do not know the unlock password, you must remove and restore power and, when the display shows all the segments, keep the key SET pressed until "dEF"appears.

Operation mode	heating (winter)
Regulation type	on/off
Differential (on/off)	0.3 °C
Band (proportional)	0.5 °C
Period (proportional)	10 minutes
Antifreeze temperature OFF	6 °C
Numbers in the phonebook	-
SMS commands Password	1234

Adj. ADJ temperature	0 °C
Min. settable temperature	2 °C
Max. settable temperature	50 °C
Hour meter operation 🔥/❄	0 h
Automatic summer time change	active (according to EU rules)
Backlighting	active
Key lock password	deactivable

REGULATION TYPES

On/off regulation

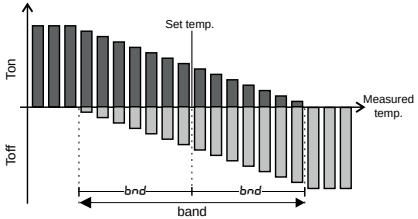
With the on/off regulation, the device activates the heating (air conditioner) until the measured temperature is lower (higher) than the set one.
In order to avoid the oscillation straddling the set temperature which would cause the system to switch on and off continuously, a differential (or hysteresis) is introduced.
In this way the system is switched on:

- in heating, when the ambient temperature drops below the value "set-temperature-differential" and remains on until the set temperature is reached.
- in conditioning, when the ambient temperature exceeds the value "set temperature+ differential" and remains on until the set temperature is reached.

The differential can be set from the ADV menu (see page 68).
Keep in mind that a low differential (0.1°C - 0.2°C) leads as a consequence more frequent ignitions of the system but the temperature will be more uniform than a high value (0.9°C - 1°C).

Proportional regulation (only for operation = heating)

The proportional regulation allows to keep the ambient temperature more constant and is based on the concept of band and period. The regulation band is the temperature range (centered on the setpoint) in which the proportional regulation is implemented. The adjustment period is the duration of the adjustment cycle (Switch-on time Ton + Switch-off time Toff). Operation is described by the following diagram:



How to choose the period:

- 10 minutes for low thermal inertia systems (fancoil)
- 20 minutes for medium thermal inertia systems (aluminum radiators)
- 30 minutes for high thermal inertia systems (cast iron radiators)

How to choose the band:

- narrow band (0.5 °C) for systems with low thermal inertia
- narrow band (5 °C) for systems with high thermal inertia

TECHNICAL CHARACTERISTICS

- Power supply: 230V AC ± 10% 50/60 Hz
- Charge reserve: about 1 hour
- Output: bistable relay with changeover contact 5A / 250V AC
- Weekly programming with 3 settable temperatures: T1, T2, T3
- Daily resolution: 1h
- Switch-on delay settable between 15, 30 or 45 minutes (independent for each hour)
- Measured temperature scale: 0°C ÷ + 50°C
- Measured and displayed temperature resolution: 0.1°C
- Temperature regulation range: 2.0°C ÷ + 50°C
- Measurement update: every 20 seconds
- Measurement accuracy: ± 0.5 ° C
- Temperature regulation:
  - on/off with adjustable differential between 0.1°C and 1°C
  - proportional with settable band and regulation period
- Operating mode: heating (winter) or conditioning (summer)
- Configurable display backlighting
- Display of relative humidity (regulation is not allowed)
- Automatic winter time/summer time
- Keypad lock with password for installation in public places
- Wall installation (or covering the box 503)
- Terminal block for cables with section of 1.5 mm^2
- GSM quad band module:
  - Operating frequency band: 900-950-1800-1900 Mhz
  - Maximum transmitted power: class 4 (2W @ 850/900 MHz); class 1 (1W @ 1800/1900 MHz)
- Operating temperature: 0°C ÷ +50°C
- Operating humidity: 20% ÷ 90% non condensing
- Storage temperature: -20°C ÷ +65°C
- Degree of protection: IP: XXD

REFERENCE STANDARDS

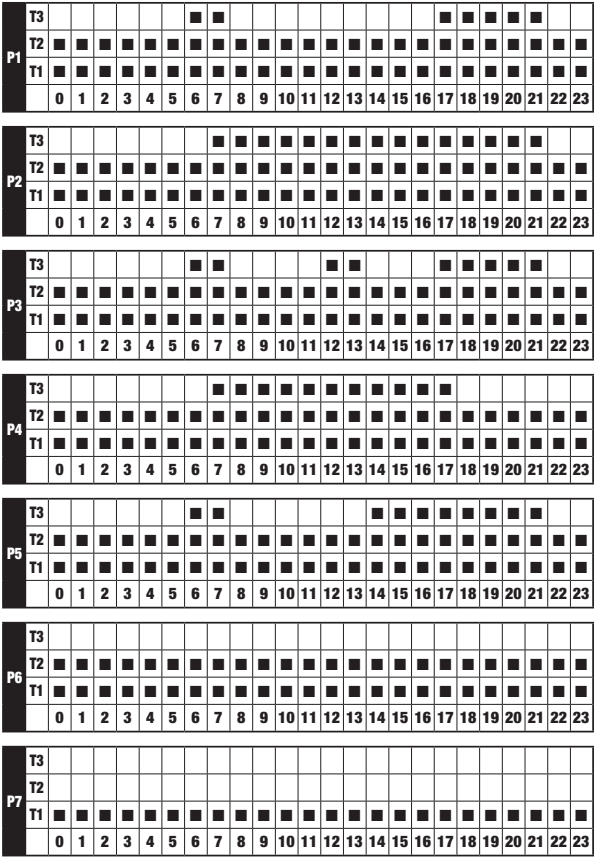
EU CONFORMITY DECLARATION

Vemer declares that the device complies with the Communitary Directive 2014/53/EU (RED)

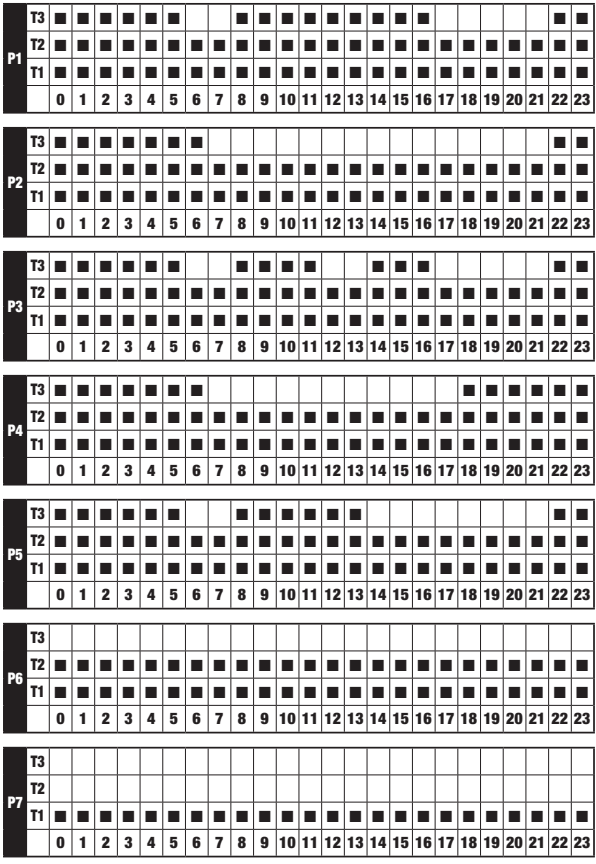
with reference to the following standards:
EN 60730-2-7, EN 60730-2-9
ETSI EN 301 511 , ETSI EN 301 489-1, ETSI EN 301 489-7

The full text of the EU Conformity Declaration is available at www.vemer.it address.

WINTER PROGRAMS



SUMMER PROGRAMS



V3IS01003-010-112020

Vemer S.p.A.

I - 32032 Feltre (BL)
Via Camp Lonc, 16
e-mail: info@vemer.it - web site: www.vemer.it

11-2020