

Cronotermostato Digitale

Mithos GSM RF

Manuale d'Uso



User Manual
DIGITAL CHRONOTHERMOSTAT



Vemer
SPA

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Mithos GSM RF digital chronothermostat



- **Comfort and control of consumptions are ensured both in winter and in summer (heating/air conditioning)**
- **Integrated GSM module for the remote control of the chronothermostat through your mobile**
- **Power supply: 230 V AC (with rechargeable backup battery NiMh type AA)**



- **Interchangeable silver cover available as accessory (code VE323200)**



- **Installation can be wall or box 503 coverage (3 modules)**
- **Display of the operation status, time, day and internal and external temperature**

- **Weekly programming with three temperature values controllable during the day**

Mithos GSM RF digital chronothermostat

Solution 1: Mithos GSM RF controls system via relay



Solution 2: Mithos GSM RF controls system via radiofrequency



Solution 3: Mithos GSM RF controls via relay system and other loads (up to 7) via radiofrequency



Solution 4: Mithos GSM RF control system via radiofrequency and other loads (up to 7) via radiofrequency

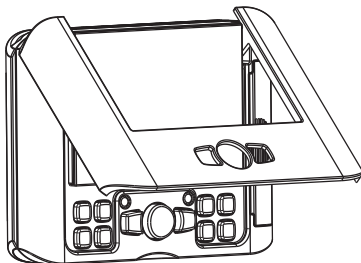
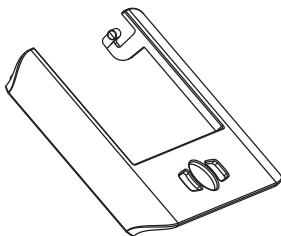
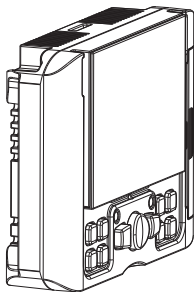
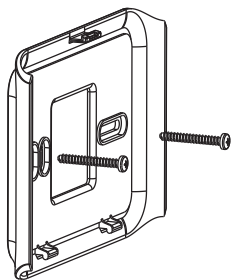


ASSEMBLY

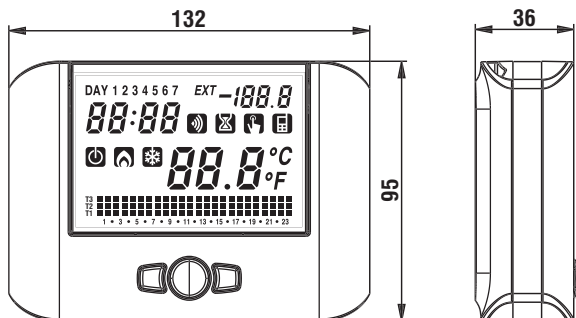
- It is advisable to place the chronothermostat in an area that mirrors, as much as possible, the conditions of average temperature of the entire environment. Avoid installing too close to doors, windows, heat sources, direct sunlight radiation and positions with excess or total lack of air inlet.

It is moreover advised to install the environment chronothermostat at about 150 cm from the floor and in an area in wich the GSM signal is good.

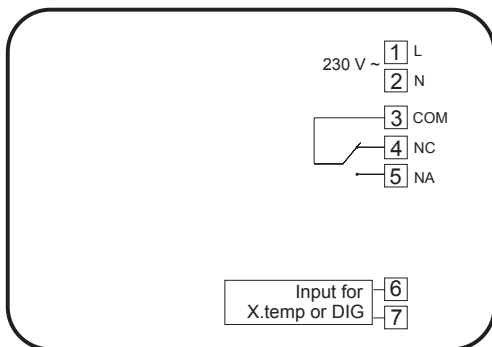
Assembly can be wall or box 503 coverage



DIMENSIONS



CONNECTION DIAGRAM



- **Mithos GSM RF** is an electronic wall-mounting chronothermostat with GSM module to be controlled remotely by sending an SMS or by using a suitable APP and radiofrequency module to control the heating (or air-conditioning) system by sending a radiofrequency signal to a remote actuator of Vemer range. The radiofrequency module is used to associate the Mithos GSM RF up to 7 auxiliary actuators, which can be turned on/off remotely with a simple SMS message. Mithos RF GSM executes actions of 1B type and suitable for environments with a pollution degree 2 and overvoltage category III (EN 60730-1).


Code	Model	Description
VE757000	Mithos GSM RF Nero	Wall-mounting chronothermostat GSM RF 230 V AC
VE756900	Mithos GSM RF Bianco	Wall-mounting chronothermostat GSM RF 230 V AC
VE323200	FR.Mithos	Silver cover

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) The use of a GSM device can cause interference with the functioning of electronic devices non-screened from radiofrequency signals (electromedical devices, pacemakers, hearing aids etc.)**

TECHNICAL CHARACTERISTICS

- Power supply: 230 V AC (-15% ÷ +10%) 50/60Hz
 - Charge reserve: about 10 hours thanks to the backup battery
 - Backup battery: NiMH rechargeable type AA, capacity 2000 mAh or higher
- △ Use rechargeable NiMH battery only

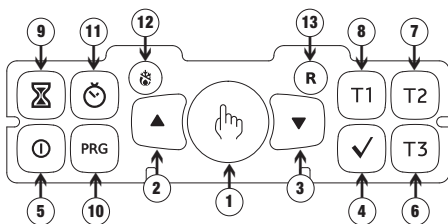
- Auxiliary input configurable to connect alternately:
 - a non-voltage contact (DIG)
 - X.Temp external temperature probe
- Output:
 - 1 bistable relay with change-over contact 8A / 250V AC
 - 1 radiofrequency channel to control the heating / air-conditioning system (to be used as an alternative to the relay)
 - 7 channels on radiofrequency to control the same number of remote actuators
- 5 temperature settings:
 - **T3, T2, T1** for automatic regulation
 - **T0** antifreeze temperature settable in advanced programming
 - **T**  temperature in manual operation
- Temperature regulation:
 - ON/OFF with differential settable between 0.1°C and 1°C
 - PROPORTIONAL with settable proportional band and regulation period setting
- Weekly programming
- Daily resolution: 1h
- Delay activation settable between 15, 30 and 45 minutes (independent for every hour)
- Measured temperature scale:
 - 0°C ÷ +50°C (internal probe)
 - -40°C ÷ +60°C (external probe)
- Measured and displayed temperature resolution: 0.1°C
- Temperature regulation range: 2.0°C ÷ +50°C
- Measurement update: every 20 seconds
- Measurement precision: ± 0.5°C
- Winter or summer or manual operation
- Optional display in °F
- Automatic change CET / DST
- Password protected keypad lock for installation in public places
- GSM quad band module (900 - 950 - 1800 - 1900 MHz)
- Transmission frequency: 433.92 MHz (for RF signals)
- Possibility to store up 5 numbers with which to control the device
- Wall mounting (or on 503 type box)
- Terminal block:
 - Output: 3 poles 1.5mm² for bistable relay
 - Input: 2 poles 1.5mm² for external probe or digital input
2 poles 1.5mm² for connection of the power supply
- Operating temperature: 0 °C ÷ +50 °C
- Operating humidity: 20% ÷ 90% non condensing
- Storage temperature -10°C ÷ +65°C
- Degree of protection: XXD

The preset temperature values (expressed in °C) are the following:

	funct. winter	funct. summer
T1	5.0	OFF
T2	15.0	23.0
T3	18.0	25.0
T _{MANUAL}	20.0	24.0

Regulation of temperature levels is subjected to the following condition: $T1 \leq T2 \leq T3$. In summer mode, T1 cannot be set and corresponds to the air conditioning OFF.

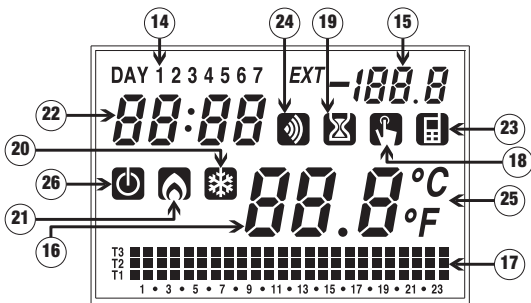
CONTROL ELEMENTS / DISPLAY INDICATIONS



■ Control elements

- 1) “” Key: manual operation
- 2) “” Key: increases the selected field or displays the daily maximum temperature
- 3) “” Key: decreases the selected field or displays the daily minimum temperature
- 4) “” Key: confirms the set data
- 5) “” Key: activation and deactivation of the chronothermostat
- 6) “T3” Key: selects temperature **T3**
- 7) “T2” Key: selects temperature **T2**
- 8) “T1” Key: selects temperature **T1**
- 9) “” Key: allows to set a timing or an activation delay
- 10) “PRG” Key: programs setting or advanced programming
- 11) “” Key: clock setting
- 12) “” Key: winter operation (preset) or summer operation (the key is reachable only with a point)
- 13) “R” Key: deletes date and time but not the set programs (to do this see "Restoring default parameters" page 33) (the key is reachable only with a point).

■ display indications



- 14) "Day" Field
- 15) "External temperature" Field
- 16) "Environment temperature" Field
- 17) "Set program" Field
- 18) "Manual operation activation" Field
- 19) "Timings" Field
- 20) "Air conditioning activation" Field
- 21) "Heating activation" Field
- 22) "Clock" Field
- 23) "Ring or incoming sms" Field
- 24) "Gsm module status" Field
- 25) "Unit of measurement" Field
- 26) "Off" Field

INITIAL START-UP / RESET

Mithos GSM RF is a chronothermostat thought to be controlled remotely via SMS or APP. To make this possible, it is necessary to have a SIM card of a telephone operator to ensure a good coverage of GSM signal receiving.

1. Connecting the Mithos GSM RF to the GSM network

Mithos GSM RF is able to determine which operator ensures the best GSM coverage in the area of installation.

Testing the GSM signal intensity

1. Turn on the Mithos GSM RF and make sure that no SIM card is inserted in the housing
2. Press the “**R**” key and right after the “**☞**” key
3. The display shows “**FLD**” and then a screen like this:

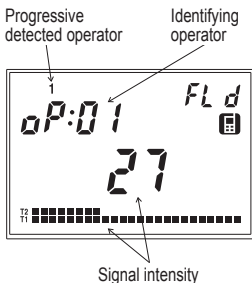
Identifying operator	Operator name
01 – 43 – 48	TIM
10 – 06	VODAFONE
88 – 44	WIND
99 – 33	3

4. Press the “**▲**” and “**▼**” keys to scroll and check the intensity of the signals of all detected operators.
5. To exit, press the “**R**” key

It is advisable to choose a SIM card of the operator with the highest signal intensity.

Requirements of the SIM card

- It must be enabled to telephone traffic (voice, not SIM data)
- it must have the PIN code request disabled (if necessary use a mobile phone to disable the request)
- it must have the voice mail disabled



Insert the SIM card into the housing in the underside of the Mithos GSM RF, with the rounded edge facing inwards and to the right, the housing is of push-push type (push to insert the SIM card and press to remove it).



The status of the connection to the GSM network is symbolized by the icon  on the display:

- lit fixed: connected to the GSM network
- lit blinking: SIM card not inserted, GSM network coverage lack / GSM network search

2. Connecting the Mithos GSM RF to the heating system

Mithos GSM RF can control the heating / air conditioning system in two ways:

- via relay
- via radiofrequency (RF) signal to be sent to a remote actuator

Connection to the system via relay

Connect the relay output respecting the diagram on page 5.

Caution: before making connections, be sure to disconnect the power supply

Connection to the system via radiofrequency (RF)

The connection to the system via radiofrequency assumes to have a remote actuator of Vemer range to be associated with Mithos RF GSM.

The activation of heating / air conditioning occurs via the remote actuator controlled by the Mithos GSM RF by means of a radiofrequency signal.

- To choose how to control the system, see page 27

3. Connecting the Mithos GSM RF to other actuators

Mithos GSM RF enables allows you to control via radiofrequency up to 7 independent actuators.

This, coupled with the fact that the Mithos GSM RF can be controlled remotely via GSM, implies that it is possible to control remotely up to 7 independent devices.

To do this you need to configure the connection between Mithos GSM RF and actuators.

- To choose how to control the system, see page 27

4. Auxiliary input connection

The chronothermostat allows you to connect a remote external temperature probe for the displaying (and possibly also regulation) of the temperature measured where the probe is placed or a not in live contact in case you want to connect an auxiliary external device (for example a gas detector, an anti-theft system, a block boiler detection system, ...).

In this last case, a possible change of the input status can be signaled by sending an SMS to a specified number (for more info, see **“GSM INTERFACE”** on page 36).

- To configure the auxiliary external input, see page 26

CLOCK SETTING

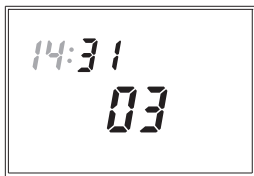
- Press the “🕒” key; on field **(16)** seconds will run flashing, while field **(22)** will display digits for minutes and hours. Press the “▲” key to reset seconds and increase the minutes field by 1 or “▼” to reset the seconds field. Press the “✓” key to confirm. (In case the setting of the clock takes place after a reset, the first parameter to set will be the “minutes” field).



At this point, the minutes digit will start flashing.

Use the “▲” and “▼” keys to increase or decrease the field and press “✓” to confirm.

Repeat the procedure to set the hours.



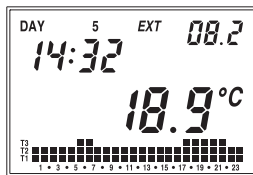
Once the value for the hours is set, field **(22)** will display a flashing value of the year, field **(15)** the value of the month and field **(16)** the value of the day.



Press the “▲” and “▼” keys to modify the values and “✓” to confirm.

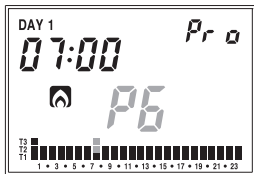
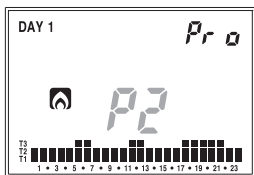
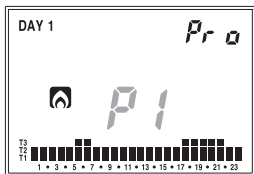
Once the day is set, press the “☺” key to exit the menu.

Upon exiting such procedure the clock indication will not flash any more; field **(16)** will display the environment temperature again, while, if the external probe is connected, field **(15)** will display the external temperature.

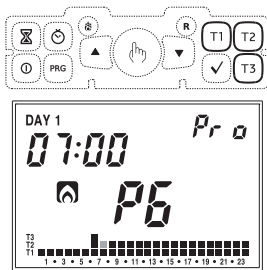


PROGRAMS SETTING

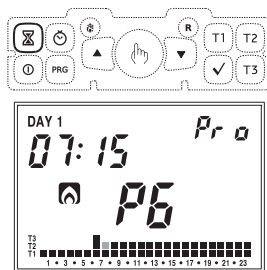
- Pressing the “**PRG**” key on field (14) the indication regarding Monday will be displayed, field (16) will display the selected program flashing (in the example: P1), field (15) will display “**Pro**”, field (17) will display the graphic trend of the corresponding program and will activate symbol (20) or (21) depending on the set operation (summer or winter). If the selected program is correct, press the “**✓**” key to continue to the next day.
- If the selected program is not correct for that day, you can create another one using the “**▲**” and “**▼**” keys which modify value “**Px**” contained in field (16); as the program changes, so does the content of field (17) regarding the selected program. The default programs are listed at the end of this manual. Once the correct program is selected, press the “**✓**” key to move on to the next day.
- If no program satisfies the user's needs, choose any program and press the “**PRG**” key again; this will bring the segment of the corresponding field (17) to flash.



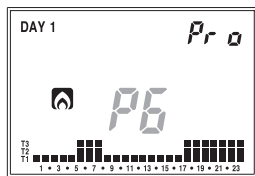
With the **T1**, **T2** and **T3** keys, it is possible to modify the temperature selected for that hour and, at the same time, move on to the next one. Using the “▲” and “▼” keys, it is possible to move from one hour to the next without modifying the set temperature.



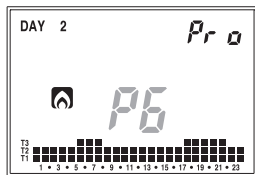
Pressing the “⌘” key, it is possible to set the activation delay for that specific hour. Each pressure of the “⌘” key increases the delay by 15 minutes.



Pressing the “✓” key confirms the modified program and returns to the situation with “Px” flashing on field (16).

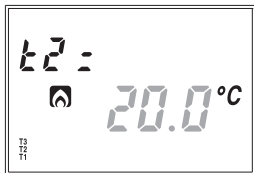


Pressing the “✓” key confirms the program for that day and moves on to the next day until Sunday appears, after which operation goes back to normal mode.

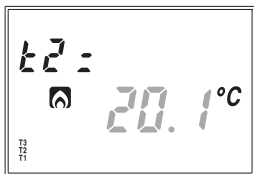


TEMPERATURES SETTING

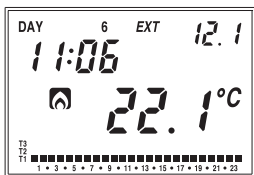
- In any of the operation modes, pressing the **T1**, **T2** and **T3** keys will bring field **(22)** to display the writing corresponding to the temperature that is being modified; on field **(16)** the value of the aforementioned temperature will flash.



With the “▲” and “▼” keys, it is possible to modify the value and with the “✓” key it is possible to confirm the change and return to normal operation.



The setting limits for the set are reported in the technical characteristics.



MANUAL OPERATION

- During automatic operation, when pressing the “” key, the system will act as a normal thermostat with operating temperature Tm.



Field **(22)** will show the current time.

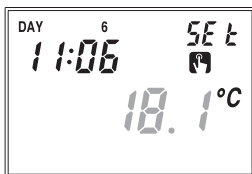
Field **(14)** will show the current date.


Field **(15)** will display the writing “**SEt**”.




The symbol **(18)** will appear.

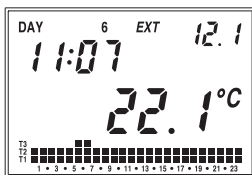


Field **(17)** will disappear. On field **(16)** the set manual temperature value will flash. With the “” and “” keys, it is possible to change the value from 2.0°C to 50°C.



Pressing the “” key or after 45 seconds from the last operation, field **(16)** will display the value of the environment temperature, while field **(15)** will display the external temperature value (if probe is connected).

At any time, it is possible to verify the set temperature pressing the “” key or the “” key; pressing one of the 2 keys again will allow modification of the temperature setting. To move from the manual program to the automatic one, simply press the “” key again for at least 3 seconds.

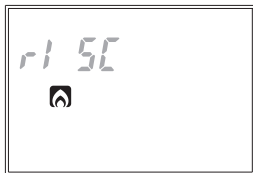


SUMMER / WINTER OPERATION

To move from winter to summer operation (or vice versa), press the “❄️” key with a point (12).



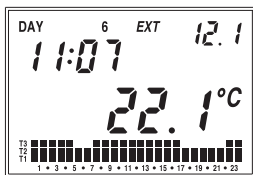
On field (22) the writing “risc” (or “Cond”) will flash and the symbol “🔥” (or “❄️”) will appear.



With the “▲” and “▼” keys, it is possible to select one of the two operations.



The program will go to the desired operation pressing the “✓” key or after 45 seconds from the last operation. The potential of the summer operation is the same as the one of the winter operation; therefore the setting of all parameters can be carried out following the procedures reported in this instructions manual.



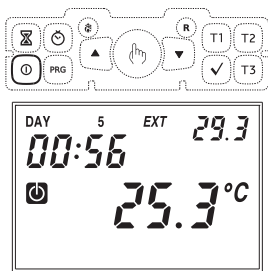
MITHOS GSM RF TURNING OFF FROM KEYBOARD

- To deactivate the chronothermostat press the “⏻” key.

The display will show the “⏻” symbol. Once deactivated, during winter operation the chronothermostat will activate the antifreeze function to ensure that the temperature does not decrease below a certain threshold. Such temperature value is set in advanced programming (see "Antifreeze temperature" page 24)

During summer operation, instead, the deactivated system condition completely excludes the refrigeration command.

To go back to the operating mode prior to the deactivation, press the “⏻” key again.



TIMINGS

The chronothermostat allows to activate three different timed operation modes, useful when you want to maintain a certain condition for some hours/days.

The three timed operations are:

Manual operation

If in manual status you set a timing, such manual status will be maintained until the end of the timing; operation will then switch to automatic. If, during the timing, operation is switched to automatic or off, the timing ends.

Automatic operation

If in automatic status you set a timing, such automatic status will be maintained until the end of the timing; operation will then switch to antifreeze/off. If, during the timing, operation is switched to manual or off, the timing ends.

Timed deactivation

If in off status you set a timing, such off status will be maintained until the end of the timing; operation will then switch to the one active before deactivation. If during the timing, the system is activated, the timing ends.

In all cases, the timing condition is signaled by the symbol “⌚”.

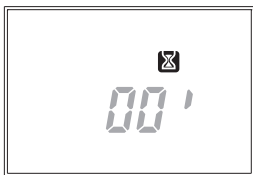
Setting a timing

To activate timing it is necessary to press the “⌚” key

At this point the writing “00”, indicating the timing, will flash on the display.

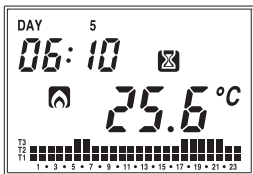
With the “▲” and “▼” keys it is possible to increase or decrease the value of the timing from a minimum of 15' to a maximum of 99 days.

The timing programming ends by pressing the “✓” key or after about 45 seconds from the last pressure of a key.



The increase of the timing field is not constant, but follows the following rules:

- for timings less than 24 hours:
increase of 15 minutes
- for timings between 1 and 5 days:
increase of 1 hour
- for timings between 5 and 99 days:
increase off 12 hours



Note. In case time is modified during timing, this last not be updated.

Note. In the hours count, the hour in which programming is carried out is included. In the same way, if the measurement unit is in days, the count also includes the current one. Timings in hours terminate on the hour, the ones in days at midnight.

ADVANCED PROGRAMMING

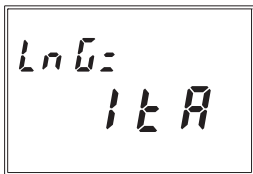
- In advanced programming it is possible to access the following operation parameters:
 - language selection
 - regulation type
 - parameters for regulation type
 - antifreeze temperature
 - temperature measurement unit
 - measured temperature correction
 - auxiliary external input configuration
 - regulation probe selection
 - GSM functions page
 - choice of how to control the system (relay - RF)
 - Auxiliary actuators configuration
 - minimum value settable as the setpoint (LO)
 - maximum value settable as the setpoint (HI)
 - keypad lock password
 - operation systems hours

- To enter advanced programming, press the “**PRG**” key for more than 3 seconds. The parameter to be modified will flash; using “**▲**” and “**▼**” it is possible to modify its value. Use “**✓**” to confirm the setting and move on to the next parameter. Once the last parameter has been confirmed, you will exit the menu and the chronothermostat will restore operation with the previously set operation.



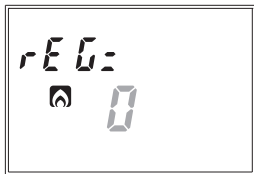
Language selection

- 3 languages are available: Italian, English, Spanish.
The syntax of the commands to be sent via SMS is different according to the set language.



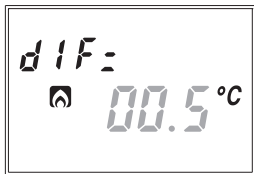
Regulation type (only for winter operation)

- Field **(22)** will display the writing “**rEG=**” and on field **(16)** letter “**0**” (ON-OFF programming), “**P**” (proportional programming) or “**tP**” (proportional programming to use if the remote actuator is a valve for radiators ThermoPro RF).
- Using the “**▲**” and “**▼**” keys, choose the desired regulation mode and press “**✓**” to confirm and move to the setting of the next parameter.



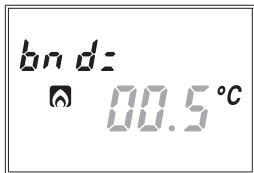
Parameters for the chosen regulation type (only for winter operation)

- In case of “**ON/OFF**” regulation type, the only parameter to be set is the differential. Field **(22)** will display the writing “**dIF=**” and on field **(16)** the value currently set will flash. Press the “**▲**” and “**▼**” keys to increase or decrease the value. The range varies from 0.1°C to 1°C.
- In case of **PROPORTIONAL** regulation type, the parameters to be set are:
 - regulation band
 - regulation period

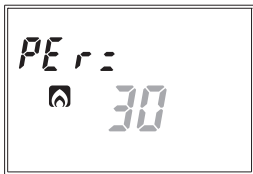


Field **(22)** will display the writing “**bn d=**” and on field **(16)** the value currently set will flash. Press the “**▲**” and “**▼**” keys to increase or decrease the value.

The range varies from 0.5°C to 5°C.



Once the band value is confirmed, field **(22)** will display the writing “**PEr=**” and on field **(16)** the value currently set will flash. Press the “▲” and “▼” keys to increase or decrease the value. It is possible to choose between 10, 20 or 30 minutes.

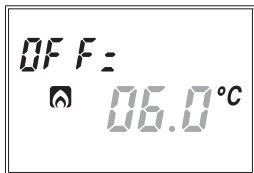


For a wider description on how to operate the regulation type choice, please refer to the chapter "REGULATION TYPE" on page 34.

Antifreeze temperature (only for winter operation)

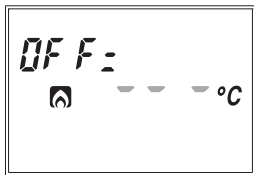
- It is possible to set a safety temperature value (antifreeze temperature) to be maintained in case the chronothermostat is deactivated.

Field **(22)** will display the writing “**OFF=**” and on field **(16)** the antifreeze temperature value currently set will flash.



Press the “▲” and “▼” keys to increase or decrease the temperature value. It is possible to choose a value between 01.0°C and 50.0°C.

It is also possible to disable the antifreeze function holding the “▼” key until field **(16)** displays the symbol “---”. In this case, when the chronothermostat is off, no regulation is executed.

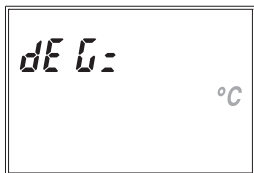


Temperature measurement unit

It is possible to choose to display the temperature in degrees Celsius (°C) or Fahrenheit (°F).

Field **(22)** displays the writing "dEG=" and on field **(25)** the measurement unit currently set will flash.

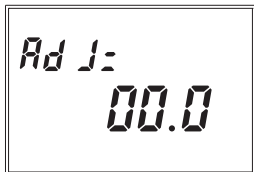
Press the "▲" or "▼" keys indifferently to change the unit and "√" to confirm.



Temperature correction page

Use this parameter to make a correction to the temperature value measured by the probe.

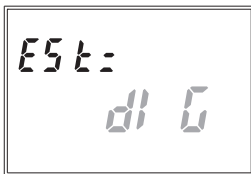
The set value is added or subtracted to the measured temperature.
Values range from -5.0°C to +5.0°C



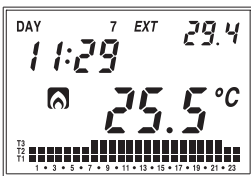
Auxiliary external input configuration

The chronothermostat allows to connect a remote external temperature probe for the displaying (and possibly also regulation) of the temperature measured where the probe is placed, or a not in live contact in case you want to connect an auxiliary external device (for example, a gas detector, an anti-theft system, block detection boiler system, ...). In this last case a change of the input status can be signaled by sending an sms to a specified number (for more info, see **"GSM INTERFACE"** on page 36).

Field **(22)** will display the writing **"Est="** and on field **(16)** the selected option will flash. Choose **"°C"** (or **"°F"**) if you want to connect an external temperature probe or choose **"DIG"** if you want to connect an auxiliary device.



If you choose **"°C"** when you exit the menu, field **(15)** will display the writing **"EXT"** followed by the value of the temperature measured by the probe.



The characteristics of the probe are the following:

- Degree of protection: IP66
- Cable length: 2 meters (extensible up to 40 meters with a bipolar cable min section 1 mm²)
- Operating temperature: -40 °C ÷ +60 °C

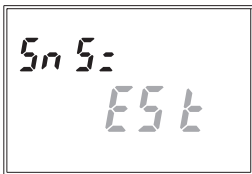
Code	Model	Capacity
VN883500	X.Temp	-40 °C ÷ +60 °C

Choosing the regulation probe

In the case in which there is an external probe, it is possible to choose whether to use as a sensor for the regulation the internal probe or the external one.

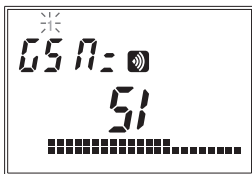
Field **(22)** will display the writing “**SnS=**” and on field **(16)** the value currently set will flash.

Using the “▲” and “▼” keys, choose “**Int**” if you want to use the internal probe or “**Est**” if you want to use the external probe and press “✓” to confirm the choice.



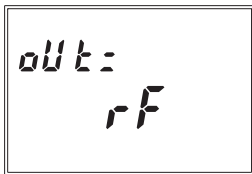
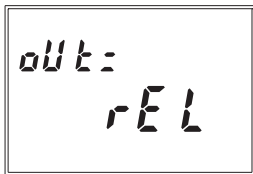
GSM functions page

This page concerns the remote operation and is treated in detail in the chapter “GSM INTERFACE” on page 36.



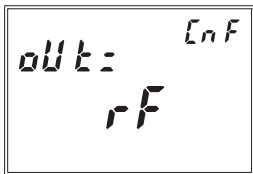
Choice of how to control the system

You can choose whether the regulation system is connected to Mithos GSM RF via relay “**reL**” or via radiofrequency “**rF**” using the remote actuator.



If you choose the regulation via radiofrequency “**rF**”, from this screen it is possible to make the configuration of the actuator, which means to associate the Mithos GSM RF and the actuator.


Note. If you choose “RF” the screen may contain the flashing writing “CNF” indicating that the actuator has not yet been configured.




To perform the configuration of RF remote actuator, put the actuator in configuration and press the “PRG” key:

- If the writing “CNF” is present, pressing the “PRG” key will perform the configuration
- If the writing “CNF” is not present, pressing of “PRG” will show “CNF” and pressing right after will perform the configuration.

Note. It is possible to repeat the configuration procedure with more RF actuators to be used for simultaneous actions.

To perform the connection test of the device with the remote actuator press the “” key:

- The writing “TST” appears to indicate test in progress
- The regulation actuator status is indicated by the “” (lit=ON)

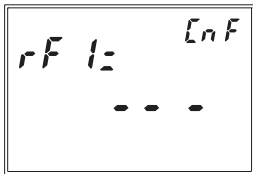
In this menu the option “TST” (connection test) performs ON / OFF actuations every 10s, or for a maximum duration of 15’.

Pressing the “” key again the test phase ends.

Auxiliary actuators configuration

It is possible to use the Mithos GSM RF to control up to 7 remote actuators (RF1, RF2,Rf7) via radiofrequency. The status of these actuators (on or off) is independent of the ambient temperature and can be remotely controlled by sending sms. In order to control these remote actuators, it is necessary to configure them.

The display shows “RF1=” followed by “ON” / “OFF” status of the remote actuator. If the actuator is not configured the writing “CNF” appears and the actuator status is è “---”.




It is possible to scroll through the 7 channels with the “” and “” keys.


- To perform the configuration of an actuator,
1. select the radiofrequency channel to be configured
 2. put the actuator in configuration,
 3. press the **"PRG"** button:


- If the writing **"CNF"** is present, pressing **"PRG"** will perform the configuration
- If the writing **"CNF"** is not present, pressing **"PRG"** will show **"CNF"** and pressing right after will perform the configuration.

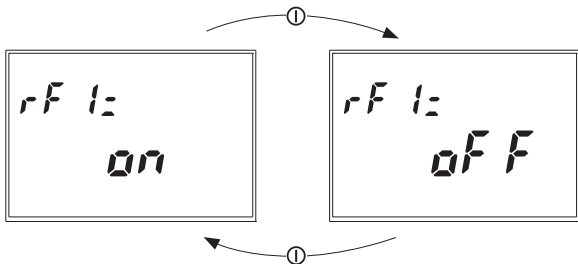
Note. It is possible to repeat the configuration procedure with more RF actuators to be used for simultaneous actions.

To perform a test connection of the device with the remote actuator press the "" key:


- The writing **"TST"** to indicate the test in progress
- The regulation actuator status is indicated by **"ON"** / **"OFF"**

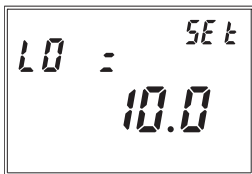
In this menu the **"TST"** option (connection test) performs ON / OFF actuations every 10s or for a maximum duration of 15'. Pressing the "" key the test phase ends.

To perform an ON / OFF actuation of the remote actuator press the "" key. The status of the **"ON"** / **"OFF"** actuator. It is possible to change the remote status remotely (see page 43 "Setting the status of a remote actuator").




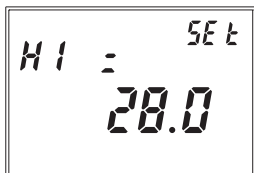
Minimum value settable as setpoint (LO)

- It is possible to limit the minimum value settable as setpoint.
Field **(11)** shows “LO=” and on field **(8)** flashes the minimum value of the setpoint. Press the “▲” and “▼” keys to increase or decrease the value and the “” key to confirm.
Settable values: 2 °C to HI (maximum value of the adjustable setpoint).



Maximum value settable as setpoint (HI)

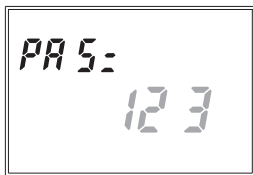
- It is possible to limit the maximum value settable as setpoint.
Field **(11)** shows “HI=” and on field **(8)** flashes the maximum value of setpoint. Press the “▲” and “▼” keys to increase or decrease the value and the “” key to confirm.
Settable values: LO ÷ 50°C.



Keypad lock password

It is possible to choose a three digits value to be used to unlock the keypad.

Field **(22)** will display the writing “PAS=” and on field **(16)** the password value currently set will flash (the default set value is “123”). Using the “▲” and “▼” keys, choose a desired value and press “✓” to confirm.

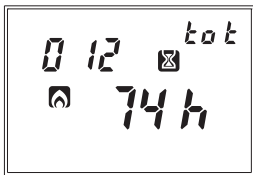


To enable/disable the keypad lock, please refer to the chapter “ADVANCED FUNCTIONS”.

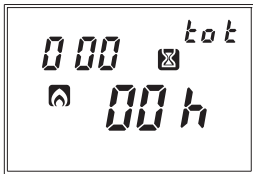
System operation hours

It is possible to display the system operation hours (relay in ON status).

Field (15) displays the writing “tot= ” while fields (22) and (16) will display the timing value (such value is of 5 digits, 3 on field (22) and 2 on field (16) and it is to be read from left to right. In the example the value is of 1274 hours).



Two independent totalizers for winter and summer operation are present. The maximum memorizable value is of 65535 hours. To reset the counter, press the “⌚” key for about 3 seconds when you are in the counter view menu.



ADVANCED FUNCTIONS

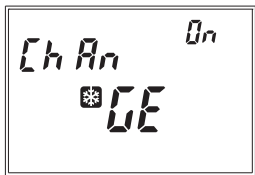
Automatic change CET / DST

The chronothermostat allows to automatically move from the CET (Central European Time) to DST (Daylight Saving Time) and vice versa.

Holding the “⌚” key for at least 3 seconds, the display will show the writing “Change” and field (15) will flash the writing “On” or “OFF”.

Choose using the “▲” or “▼” keys and confirm with “✓”.

If the choice is OFF, you will exit the menu and the chronothermostat will not execute the hour change. If the choice is ON, then will be displayed two other menus, which define respectively the hour change from



- winter → summer
- summer → winter (on field (20) the “❄️” symbol will appear)

To modify the set values, press the “**PRG**” key. The parameter corresponding to the modification will start flashing. Press the “**▲**” and “**▼**” keys to modify the values and “**✓**” to confirm.

The settings for both menus are, in order:

- week of the month
(**1ST** first, **2ND** second, **3RD** third, **4TH** fourth, **LST** last)
- day of the week
- month
- changing hour



At the end of each menu, press the

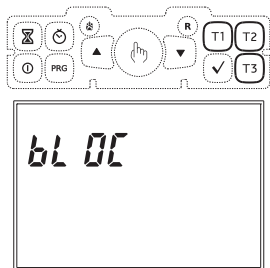
“**✓**” key again to access the next menu or to exit and return to the normal view.

The default values set for the automatic time change are:

- winter → summer change: last Sunday of March at 02:00
- summer → winter change: last Sunday of October at 03:00

Keypad lock

In case you want to install the chronothermostat in public environments, it is possible to lock the keypad simply by simultaneously holding the **T1**, **T2** and **T3** keys for 3 seconds. The display will show the writing “**BLOC**”.

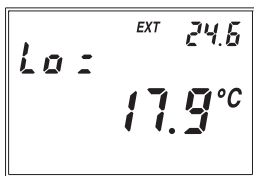
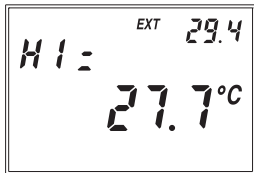


To unlock the keypad, press the **T1**, **T2** and **T3** keys again for 3 seconds and enter through the “▲” and “▼” keys, the protection password.



Display of max/min daily temperature

The chronothermostat memorizes automatically the minimum and maximum temperature values measured both from the internal probe as well as from the external one during the day. To view such values press the “▲” key (maximum value) or “▼” (minimum value). Field **(15)** will display the value relevant to the external probe while field **(16)** will display the value relevant to the internal probe. To reset the memorized minimum/maximum value, press the “▲”/“▼” key for at least 3 seconds.



Emergency regulation

During winter operation, in case of sensor failure, in order to avoid problems regarding freezing, the chronothermostat activates the relay for 10 minutes every 4 hours and field **(16)** will display the “---” symbol.

Restoring default parameters

Simply pressing the “**R**” key will not cause a total reset of the device. To do so and allow the loading of the default values, it is necessary to press the “**R**” key and then, within 3 seconds, the “✓” key. The display will show the writing “**dEF**”.

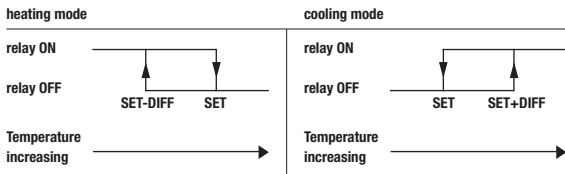
Note: In this mode also the remote operating settings (numners, recipient of alarm, ...) are deleted (see “Gsm interface” page 36).

REGULATION TYPE

• ON / OFF regulation

The default regulation is of **ON/OFF** type with deactivation in correspondence with the setpoint and with differential set to 0.3 °C.

During on/off operating mode, the output relay follows this logic:



• Proportional regulation

During heating mode you can choose the **proportional** regulation that allows, in certain types of systems, to improve the regulation, in order to obtain a constant temperature.

This regulation activates the ON or OFF relay within a predefined regulation cycle on the basis of the gap of the temperature measured by the setpoint value.

The necessary parameters for the definition of this mode are:

- the regulation band
- the regulation period

The regulation band represents the temperature interval, centered on the setpoint, in which the proportional regulation is checked.

Half the desired regulation band is set in the device.

The range for this parameter is $0.5 \div 5.0^{\circ}\text{C}$ with 0.1°C resolution

The regulation period represents the duration of the regulation cycle (activation period + deactivation period)

The value of this parameter is selectable between 10', 20' and 30'

Choose the regulation period value as follows:

- 10' for low thermal inertia systems
- 20' for medium thermal inertia systems
- 30' for high thermal inertia systems

Choose the regulation band value as follows:

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

- **tP Setting**

Note. This regulation should be used only if you are controlling a valve for ThermoPro RF radiators

This type of regulation allows you to make the ThermoPro RF valve work by “opening modulation”.

In this way, the valve opens proportionally according to the difference between the set temperature (set point) and the detected temperature.

Selecting one of the other regulation types, the valve will not work proportionally, but it will be completely open or completely closed according to the difference between the set temperature and the detected temperature.

- The Mithos GSM RF integrates a GSM module with which you can manage remotely the chronothermostat using a normal cell phone.

Structure of a command text message

The text messages that are sent to the chronothermostat to perform settings must respect the following structure:

[password] [command] [parameter 1] ... [parameter n]

[password] → 4 digits number field

[command] → type of command recognised by the device

[parameter] → series of parameters relative to the command

Notes:

- **the words must be separated by one or more empty spaces**
- **the password field may be omitted if the message sender is a number in the telephone book (see telephone book management below)**
- **it is possible to concatenate multiple commands in a single message up to a maximum of three**
- **to enter numbers with a decimal, the separator must be a point**
- **Mithos GSM RF is not case-sensitive, therefore you can write with lower case or upper case letters**

If the command is correct, the sender receives a text message reply, whose structure is similar to the command itself, with the addition of the “=” symbol, indicating the current status. For example:



MITHOS=ACCESO MANUALE

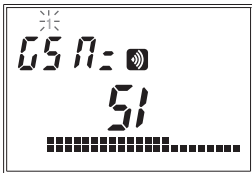
Recording numbers in the telephone book

The Mithos GSM RF makes it possible to store up to 5 numbers in the telephone book, identified with a progressive number from 1 to 5, which may activate/deactivate the device with a ring or send command text messages or receive any alarms.

Storing the first number in the telephone book

To store the first number, from the normal operating status:

- press and hold down the “**PRG**” key for at least 3 seconds to access the advanced programming menu.
- press the “**√**” key until the “**GSM functions**” page appears.
- the icon  must be fixed, indicating the correct reception of the GSM signal.
- make a call to Mithos GSM RF with the number you want to record in the first position of the telephone book.
The symbol  appears during the call.



The caller will receive a text message confirming the setting was performed:
RUBRICA 1=number1 2=VUOTO 3=VUOTO 4=VUOTO 5=VUOTO

Storing other numbers in the telephone book

The remaining numbers in the telephone book can be set by sending a text message (texting mode) or with a telephone ring (ring mode) directly with the number to be added.

Text message mode

The command to send is:

RUBRICA [index] [number] where:

- [index] → is the position in which the number should be stored (from 1 to 5)
 [number] → is the telephone number you want to add to the telephone book

Note: remember that if the command sender is not in the telephone book, the password must precede the command.

For example:

RUBRICA 2 3921234567

The telephone book responds with a confirmation text message containing the complete telephone book (if a number is not defined, it is indicated with “vuoto”). Multiple numbers can be added with one text message.

For example:

RUBRICA 2 3921234567 5 3001234567

To delete a number from the telephone book, use the string VUOTO.

For example:

RUBRICA 2 VUOTO deletes the number saved in position 2.

To view a complete list of the saved numbers, use the RUBRICA command without parameters.

For example:

RUBRICA

Txt message response

RUBRICA 1= 2221234567 2=VUOTO 3=VUOTO

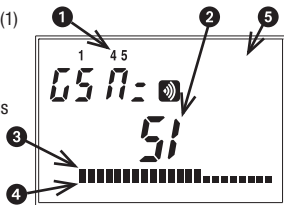
4=VUOTO 5= 3001234567

Ring mode

Attention: the following procedure is recommended for expert users; otherwise, use the previously described text message method.

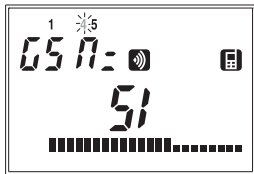
The GSM functions page displays the following information:

- the occupied telephone book positions (1)
- the presence of the GSM field (2), with the level of the GSM signal (3) on the available total (4)
- the indication of the error type if there is a malfunction (5)



Checking the presence of a number in the telephone book

From the GSM functions page, you can check if the telephone number is present in the telephone book and, possibly, in which position. To do this, simply make a call to Mithos GSM RF with the number you want to check; if the number is in the telephone book, the index of the corresponding memory will start to flash (in the example to the side, the number is in position 4).



Adding a number to the telephone book

Numbers can be added to the telephone book with a simple telephone ring, without the need to send a text message. To do this, from the GSM functions page:

- hold down the “PRG” key for 3 seconds.
The position of the telephone book where you can store the new number will start to flash, whereas all the already occupied positions will remain on fixed
- press the “▲” and “▼” keys to select the position in the telephone book where you want to store the number
- carry out a ring with the number you want to add to the telephone book. The caller will receive a text message from Mithos GSM RF confirming that the addition was made (to exit without recording a new number, press the “PRG” key for 3 seconds).

Note: if the position in the telephone book is already occupied, it is overwritten with the new number.

MANAGING THE CHRONOTHERMOSTAT

Activating/deactivating with a ring

The numbers in the telephone book switch the operating mode simply with a telephone ring, according to the following rules:

- if in automatic operation, after the ring it will switch to off operation (with the antifreeze temperature, if enabled)
- if in manual operation, after the ring it will switch to off operation (with the antifreeze temperature, if enabled)
- if in off operation, after the ring it will switch to the operating mode it had prior to being shut off (automatic or manual)

The number in the telephone book that made the call will receive a text message informing of the chronothermostat status. Some examples:

```
MITHOS=ACCESO (AUTOMATICO)
MITHOS=SPENTO (ANTIGELO=02.0 C)
MITHOS=ACCESO (MANUALE=20.0 C)
MITHOS=SPENTO (ANTIGELO=DISABILITATO)
```

Setting the operating mode

It is possible to set the operating mode of the device and even set the timing if you want to maintain a certain operation only for a certain period of time.

The syntaxes of the commands to send are:

MITHOS ACCESO AUTOMATICO [period] [unit of measurement]

MITHOS SPENTO [period] [unit of measurement]

MITHOS ACCESO MANUALE [period] [unit of measurement]

where:

→ MITHOS ACCESO AUTOMATICO for setting automatic operation

→ MITHOS SPENTO for setting off operation (with possible antifreeze)

→ MITHOS ACCESO MANUALE for setting manual operation or

[period] → indicates any timer period (values between 0 and 99)

[unit of measurement] → indicates the unit of measurement for the timer period
(G = days, H = hours)

Note: the parameters [period] and [unit of measurement] are optional.

Note: the rules for the timings are the same as those defined on pages 20-21.

Some examples:

MITHOS ACCESO AUTOMATICO → sets automatic operation (no timing)

MITHOS MANUALE → sets manual operation (no timer)

MITHOS AUTOMATICO 20 H → sets automatic operation for 20 hours, at the end of which the chronothermostat will switch to off/antifreeze operation

MITHOS SPENTO 2 G → sets off operation for 2 days, at the end of which the chronothermostat will return to the operation it had before being shut off (automatic or manual)

The number in the telephone book that sent the command will receive a text message informing of the chronothermostat status.

Some examples:

MITHOS=ACCESO (AUTOMATICO)

MITHOS=SPENTO (ANTIGELO=DISABILITATO) .

Setting the heating/air conditioning mode

The heating or air conditioning operating mode can be set with a text message. The syntax of the commands to send are:

MITHOS RISCALDAMENTO MITHOS CONDIZIONAMENTO

For example:

MITHOS RISCALDAMENTO → sets the heating operation

The chronothermostat responds with a text message with information about the operating mode

For example:

**MITHOS=RISCALDAMENTO
MITHOS=CONDIZIONAMENTO**

Defining the antifreeze temperature

The T0 command can be used to set the antifreeze temperature value to be maintained if the chronothermostat is turned off (remember that the antifreeze function is only available with the heating mode).

The syntax of the command to send is:

T0 [tt.t] where
[tt.t] → values between 1.0 and 15.0 or DISABILITATO

Some examples:

T0 DISABILITATO excludes the antifreeze temperature (therefore when the device is off, there is no regulation)

T0 5.5 sets the antifreeze temperature to 5.5°C

The number in the telephone book that sent the command will receive a confirmation text message. For example:

**T0 ANTIGELO=05.5 °C
T0 ANTIGELO=DISABILITATO**

Defining the manual temperature

Using the Tm command, the manual temperature value of the current operating mode (heating or cooling) can be set.

The syntax of the command to send is:

Tm [tt.t] where
[tt.t] → values between 2.0 and 50.0

For example:

Tm 18.0 sets the manual temperature to 18°C

The number in the telephone book that sent the command will receive a confirmation text message. For example:

TM=18.0 °C (ESTATE)

Defining the T1, T2, T3 temperatures

Commands T1, T2, T3 can be used to set the t1, t2, t3 temperatures for the currently set operating mode (heating or air conditioning).

The syntax of the commands to send are:

T1 [tt.t] → sets the T1 temperature of the current operating mode (heat. or air cond.)

T2 [tt.t] → sets the T2 temperature of the current operating mode (heat. or air cond.)

T3 [tt.t] → sets the T3 temperature of the current operating mode (heat. or air cond.)

where

[tt.t] values between 2.0 and 50.0

Note: when defining a temperature, the condition $T1 \leq T2 \leq T3$ must be respected.

Some examples:

T2 18.7 sets the temperature t2 to 18.7 °C

T1 15.0 sets the temperature t1 to 15°C

The number in the telephone book that sent the command will receive a confirmation text message.

For example:

T2=18.7 °C

T1=15.0 °C

Setting the status of an auxiliary remote actuator

To set the state of one of the 7 remote actuators that can be connected via radio frequency to the Mithos GSM RF, use the command:

OUTRF [channel number] [status] where

[channel number] → is a number from 1 to 7 of the channel to be set
[status] → ON or OFF

Some examples:

OUTRF 1 OFF switches off the remote actuator associated to the channel 1

OUTRF 4 ON switches on the remote actuator associated to the channel 4

To learn the status of an actuator, use the command OUTFR followed by the channel number. For example:

OUTRF 3 to know the actuator status associated to the channel 3.

Requesting system operating hours

To know remotely the hours of the system operation connected to the relay (or to the radiofrequency channel dedicated to the regulation) use the command:

COUNTER

The Mithos GSM RF responds to the sender with a text message containing the hours of the current operation system.

To reset the counter, use the command

COUNTER RESET

Requesting information

With the commands MITHOS INFO and MITHOS INFO TUTTO, the chronothermostat can be queried to receive information regarding system status. In particular, with MITHOS INFO TUTTO, the following information can be received:

- temperature measured by the internal probe (INT)
- temperature measured by the external probe (EXT) or digital input status
- operating status (automatic, manual or off)
- operating mode (heating or air conditioning)

- temperature values
- relay status and current setpoint
- network power supply status
- GSM field
- number of the SIM card inserted in the Mithos GSM RF
- date and time

With MITHOS INFO, information can be received regarding the temperature measured by the internal probe, the operating status and the operating mode.

The syntax of the commands to send are:

MITHOS INFO **MITHOS INFO TUTTO**

A possible response to MITHOS INFO TUTTO is the following:

```
INT=20.1°C (REG)
EXT=-10.3°C oppure CONTATTO=APERTO
MITHOS=MANUALE RISCALDAMENTO
TM=21.0°C
RELE=ACCESO
ALIMENTAZIONE=SI
GSM=100%
N SIM=3331234567
01.07.10
14:55:23
```

which means:

internal temperature probe: 20.1°C.
 external temperature probe: -10.3°C or digital input status: open
 manual operation in heating mode
 on relay status (system active)
 network power supply
 optimal GSM field coverage (100%)
 number of the Mithos GSM RF card: 3331234567 (ND if not defined)
 date: 01 July 2016
 time: 14:55:23

“(reg)”, which in this case follows the measured internal probe temperature, indicates which of the two probes (if both are present) will be regulated.

MANAGING THE ALARMS

The chronothermostat can be configured to sent alarm text messages to the numbers in the telephone book.

There are four alarm sources:

- minimum alarm → if the measured temperature goes below a specified threshold
- maximum alarm → if the measured temperature exceeds a specified threshold
- power supply alarm → if there is a blackout
- external alarm → in the case of a generic alarm on the digital input

For each alarm source, it is possible to specify the numbers in the telephone book to which the text message should be sent.

The device is configured in the factory to send alarms to the first number in the telephone book in the following cases:

- **power supply failure and restoration**
- **temperature measured by the internal probe below 5 °C**
- **alarm on closed digital input status (with 10 seconds delay)**

The following commands can be used to change this configuration.

Defining alarm recipients

It is possible to specify message recipients for each alarm source.

The command syntax is:

INVIO ALLARME MINIMA [recipient] ...[recipient]
INVIO ALLARME MASSIMA [recipient] ...[recipient]
INVIO ALLARME ESTERNO [recipient] ...[recipient]
INVIO ALLARME ALIMENTAZIONE [recipient] ...[recipient]

where:

[recipient] → indicates the number in the telephone book to which the alarm is sent

Some examples:

INVIO ALLARME ESTERNO 1 3 4 → sends a text message to numbers 1, 3, 4 in the telephone book if there is a digital input alarm

INVIO ALLARME MASSIMA 2 → sends a text message to number 2 in the telephone book in the case of a temperature threshold exceeded alarm

INVIO ALLARME ALIMENTAZIONE 5 → sends a text message to number 5 in the telephone book in the case of a power supply failure

If a recipient is not specified, the device responds with the list of numbers that receive the alarm. For example:

INVIO ALLARME ESTERNO → **ALLARME ESTERNO=1, 3, 4**

Note: newly setting the alarm recipients will overwrite the previous setting, therefore all the recipients must be indicated in a single command.

To delete a setting for the recipients, use “VUOTO” .

For example:

INVIO ALLARME ALIMENTAZIONE VUOTO → deletes all the recipients in the case of an electrical network failure alarm

Definition of the alarm from digital input

It is possible to specify the condition for which an alarm occurs in the digital input.

In particular, the following must be defined:

- the status (open or closed)
- the delay, or after how much permanence time of a certain status an alarm can be considered

The alarm syntaxes are:

IMPOSTA ALLARME CONTATTO APERTO [delay]

IMPOSTA ALLARME CONTATTO CHIUSO [delay]

where:

[delay] → numeric value that indicates after how many seconds of permanence in the open or closed state an alarm must be considered

IMPOSTA ALLARME CONTATTO → restores the current configuration of the input alarm

Some examples:

IMPOSTA ALLARME CONTATTO APERTO 10 → digital input alarm if the chronothermostat input has an open status for at least 10 seconds

IMPOSTA ALLARME CONTATTO CHIUSO 30 → digital input alarm if the chronothermostat input has closed status for at least 30 seconds

Notes: the alarm return is immediate in correspondence with the contact status change.

Defining the digital alarm text

Using the command TESTO ALLARME ESTERNO, it is possible to specify the text of the message sent to the numbers in the telephone book following an alarm on the digital input.

The command syntax is:

TESTO ALLARME ESTERNO [text] where

[text] → text of maximum 24 characters (spaces included)

For example:

TESTO ALLARME ESTERNO boiler shutdown alarm → in this case, if an alarm occurs on the input, the text “boiler shutdown alarm” will be sent to the specified numbers.

Definition of the temperature threshold exceeded alarm

Using the commands IMPOSTA ALLARME MASSIMA and IMPOSTA ALLARME MINIMA, a maximum or minimum threshold can be set that if exceeded, generates an alarm that is sent to the numbers specified in the telephone book.

The command syntax is:

IMPOSTA ALLARME MASSIMA [probe] [threshold] [hysteresis] [delay]

IMPOSTA ALLARME MINIMA [probe] [threshold] [hysteresis] [delay]

where:

[probe] → INT if you want to use the internal probe, EXT for an external probe

[threshold] → temperature limit value

[hysteresis] → value used to calculate the alarm return threshold. It is subtracted from the threshold in the case of a maximum alarm and added to the threshold in the case of a minimum alarm

[delay] → numerical value that indicates after how many minutes of permanence beyond threshold [threshold] the alarm must be considered

IMPOSTA ALLARME MASSIMA → restores the current configuration for the maximum threshold

IMPOSTA ALLARME MINIMA → restores the current configuration for the minimum threshold

Some examples:

IMPOSTA ALLARME MINIMA INT 12 2 30 → generates a minimum alarm if the temperature measured by the internal probe goes below 12°C for at least 30 minutes and considers the alarm restored when the temperature exceeds 14°C (12+2).

IMPOSTA ALLARME MASSIMA EXT 28.5 1.5 50 → generates a maximum alarm if the temperature measured by the external probe exceeds 28.5°C for at least 50 minutes and considers the alarm restored when the temperature goes below 27°C (28.5-1.5).

Note: the alarm return is immediate when the alarm return temperature is reached (no delay)

Power supply failure alarm

In the case of a power supply failure, the Mithos GSM RF has a backup battery that permits operation of the chronothermostat for approx. one hour.

The recipients of this alarm will receive the following message in the case of power network failure and restoration:

ALLARME ALIMENTAZIONE=INTERROTTA (gg/mm/aa hh:mm)

FINE ALLARME ALIMENTAZIONE=RIPRISTINATA
(gg/mm/aa hh:mm)

By default, the number in the telephone book with index 1 receives the network failure alarm.

Note: the alarm message is not sent instantaneously, but there is a delay of a few seconds (signaled by the flashing  symbol), to make sure the device has a stable GSM connection.

Redirecting unrecognised messages

If the chronothermostat receives a text message with an unrecognised command, it is forwarded to a number in the telephone book.

This function may be useful if the telephone operator sends information messages to the SIM card inserted in the chronothermostat (for example no or expiring credit). By default, the unrecognised messages are forwarded to the number in position 1 in the telephone book.

With the INOLTRA command, it is possible to specify another telephone book number.

The syntax is:

INOLTRA [index] , where

[index] → 1, 2, 3, 4, 5 to indicate one of the numbers in the telephone book

INOLTRA NESSUNO disables the forward function (messages are not redirected)

Password management

All of the previously described commands can also be sent by numbers not recorded in the telephone book, as long as the message starts with the correct password. The default password is 1234

This password can be modified by any number in the telephone book with the command:

PASSWORD [new password]

The new password must have 4 numbers.

Synchronising the clock

For correct Mithos GSM RF operation, the date and time values must be correct. In the case of an extended blackout - longer than the battery charge of approx. one hour - these values are lost and the chronothermostat will stop all regulations until the date and time values are reset.

These values can be reset either automatically or manually.

Automatically:

in this case, the chronothermostat automatically sets the date and time when the power supply returns, without user intervention.

This function depends on the telephone operator. If this service is not present, you

can still specify the number of the SimCard inserted in the Mithos GSM RF with the command:

MITHOS NUMERO [numero]

where [numero] is the telephone number of the SIM card inserted in the Mithos GSM RF.

The Mithos GSM RF will respond to the sender with the following type of message:

MITHOS NUMERO 3331234567

In this way the Mithos GSM RF, when power returns, will self-send a text message useful to set date and time.

Manually

If the number of the SIM card in the Mithos GSM RF is not specified, the time and date can be remotely synchronised.

When the power supply restoration message is received (“**fine allarme alimentazione=ripristinata (impostare data e ora)**”), simply send the following command to the Mithos GSM RF:

CLOCK

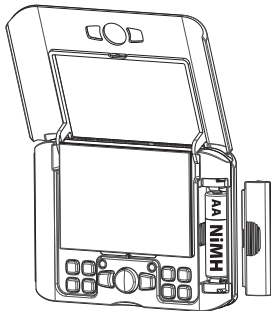
The chronothermostat responds to the sender with the set date and time. For example:

OROLOGIO=01/07/10 14.31

BACKUP BATTERY

The device has a backup battery that permits operation in the case of a power supply failure until it is completely discharged. The battery is recharged by Mithos GSM RF: the battery is completely recharged after approx. 24 hours of being powered by the network. The backup battery can be accessed by removing the cover and can be replaced without disconnecting the power supply voltage.

Use NiMH (AA) batteries with a capacity of 2000 mAh or higher.



⚠ Use only rechargeable batteries.



When replacing, dispose of the battery in the specific containers for differential collection.

REFERENCE STANDARDS

Compliance with Community Directives
2014/53/EU (RED)

is declared with reference to the following harmonized standards:

EN 60730-2-7 and EN 60730-2-9

EN 301489-1 and EN 301489-7



Summary of the main remote commands:

Command	Parameters	Description
RUBRICA	[index] [number] [number]	Adds the [number] to the telephone book position [index] Stores the added SIM [number] in Mithos GSM RF
MITHOS NUMERO		Turns on Mithos GSM RF in automatic mode
MITHOS ACCESO AUTOMATICO		Turns on Mithos GSM RF in manual mode
MITHOS ACCESO MANUALE		Turns off Mithos GSM RF
MITHOS SPENTO		Turns off Mithos GSM RF
T0	[temperature]	Sets the temperature of the off mode T0 to the [temperature] value. Possible values: disabled, 1 ÷ 15
T1	[temperature]	Sets the temperature T1 of the automatic mode to the [temperature] value. Possible values: 2 ÷ 50 (with $T1 < T2 < T3$)
T2	[temperature]	Sets the temperature T2 of the automatic mode to the [temperature] value. Possible values: 2 ÷ 50 (with $T1 < T2 < T3$)
T3	[temperature]	Sets the temperature T3 of the automatic mode to the [temperature] value. Possible values: 2 ÷ 50 (with $T1 < T2 < T3$)
TM	[temperature]	Sets the temperature TM of the manual mode to the [temperature] value. Possible values: 2 ÷ 50
MITHOS RISCALDAMENTO		Sets the heating mode
MITHOS CONDIZIONAMENTO		Sets the air conditioning mode
MITHOS INFO		Requests information about the internal probe temperature, operating mode, date and time
MITHOS INFO TUTTO		Requests information about all parameters
OROLOGIO		Synchronises the date and time in the Mithos GSM RF with the GSM network date and time



Summary of the main remote commands:

Command	Parameters	Description
OUTRF	[channel number] [status]	To set the status of a remote actuator
COUNTER		To know the number of operating hours system
INVIO ALLARME MINIMA	[recipient1]... [recipient5]	Indicates the numbers in the telephone book to which the minimum temperature threshold exceeded alarm is sent
INVIO ALLARME MASSIMA	[recipient1]... [recipient5]	Indicates the numbers in the telephone book to which the maximum temperature threshold exceeded alarm is sent
INVIO ALLARME ESTERNO	[recipient1]... [recipient5]	Indicates the numbers in the telephone book to which the digital input alarm is sent
INVIO ALLARME ALIMENTAZIONE	[recipient1]... [recipient5]	Indicates the numbers in the telephone book to which the power supply failure or restoration alarm is sent
IMPOSTA ALLARME CONTATTO APERTO	[delay]	Sets the seconds [delay] for the open contact alarm
IMPOSTA ALLARME CONTATTO CHIUSO	[delay]	Sets the seconds [delay] for the closed contact alarm
IMPOSTA ALLARME TEMPERATURA MASSIMA	[probe] [threshold] [hysteresis] [delay]	Sets the maximum threshold exceeded alarm for the [probe] to the value [threshold] with [hysteresis] and [delay]
IMPOSTA ALLARME TEMPERATURA MINIMA	[probe] [threshold] [hysteresis] [delay]	Sets the minimum threshold exceeded alarm for the [probe] to the value [threshold] with [hysteresis] and [delay]



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