FantiniCosmi

WEEKLY PROGRAMMABLE THERMOSTAT
BACKLIGHTED TOUCH SCREEN

CH150TS

INDEX

Introduction

Chronothermostat CH150TS/151TS/152TS is suitable to measure the ambient temperature and to control the heating and air conditioning system to which it is connected. The operating mode can be chosen between the preset ones or can be customized according to user's needs.
The wide display shows the temperature profile — i.e.: the relationship between the time table and the temperature to be kept —, as well as the measured temperature, relative humidity, calculated perceived temperature, time and day of the week.
The chronothermostat is battery powered. Both settings and data are stored in a non-volatile memory capable of retaining them even when batteries are down.

The chronothermostat is available in the following version:
• CH150TS Chronothermostat with 5 A relay

The following external interfaces are available for CH150TS chronothermostat:
• Separate temperature probe;
• Telephone activator with GSM modem, for remote management via SMS messages.

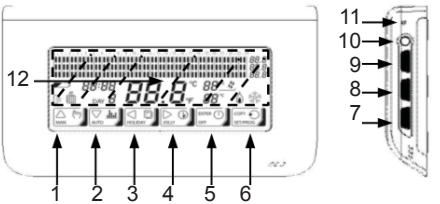
The telephone activator enables the following:
• remote communication with the chronothermostat to know the ambient temperature or the status of the heating or air conditioning system;
• remote management of the chronothermostat operating modes.

The chronothermostat comes in three colours: white, silver (CH151TS series) and anthracite black (CH152TS series).

Unless otherwise specified, the instructions contained in this manual apply to every chronothermostat model.

Controls and indications

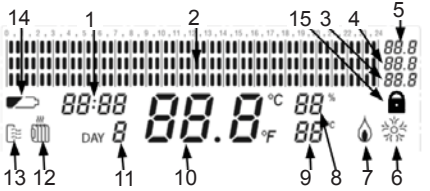
Controls



1. Button used to select the “Manual” operating mode or increase a value (▲) *
2. Button used to select the “Automatic” operating mode or decrease a value (▼) *
3. Button used to select the “Holiday” operating mode or go back to the previous data item (◄) *
4. Button used to select the “Jolly” operating mode or go to the next data item (►) *
5. Button used for the “OFF” or “Enter” functions *
6. Button used for the “Programming” or “Copy” or “Statistical data displaying” functions *
7. Rotary selector for temperature correction: T1, Manual temperature, Jolly temperature, and
Antifreeze temperature *
8. Rotary selector for correcting temperature T2 or the Jolly operating mode duration *
9. Rotary selector for correcting temperature T3 or the Jolly operating mode duration
10. Summer/Winter switching key and keyboard lock
11. Chronothermostat reset button
12. Backlighted area

* The function associated with the button or selector depends on the current operating mode. It is highlighted by the icon placed above.

Indications



1. Time
2. Temperature profile
3. Temperature value T1 or “Jolly” operating mode duration (days)
4. Temperature value T2 or “Jolly” operating mode duration (hours)
5. Temperature value T3
6. System ON in Summer operation
7. System ON in Winter operation
8. Relative humidity percentage
9. Perceived temperature (displayed by the degree)
10. Ambient/external temperature
11. Current day (1 = Monday … 7 = Sunday; 8 = Holiday)
12. Winter operation
13. Summer operation
14. Battery charge level
15. keyboard lock

Note: Pressing of a key is signalled by a short acoustic signal.
When ON, backlighting will stay on for about three seconds after pressing a key

User manual

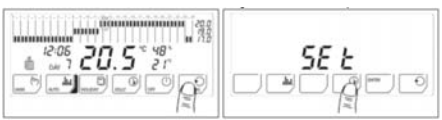
To operate the chronothermostat after it has been installed, proceed as follows:

1. Set the date and time.
2. Select the Summer/Winter operation.
3. Select the operating mode.

Setting the date and time

To set the current time and date, proceed as follows:

1. Enter the programming menu main page. The operating mode currently used will be interrupted temporarily. Choose the time setting function.

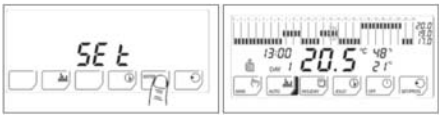


2. Modify the hour setting by means of the ▲ and ▼ buttons, then go to the minute setting by means of the ► button.

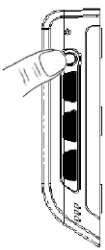
3. Modify the minute setting by means of the ▲ and ▼ buttons, then go to the day setting by means of the ► button.

4.Modify the day setting by means of the ▲ button, then press ENTER to go back to the main page of the programming menu.

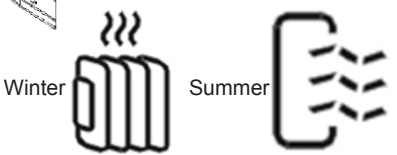
5. Press ENTER again to exit the programming menu. The chronothermostat operating mode previously interrupted will be resumed.



Summer/Winter selection



To shift from the Summer operation (heating system) to the Summer operation (cooling system), and vice versa, keep the Summer/Winter button depressed for at least 4 seconds. The selected operation will be shown on the display by means of the “Winter” or “Summer” icons.

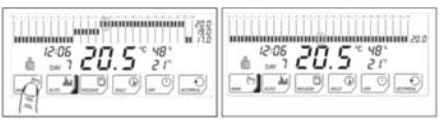


Operating modes

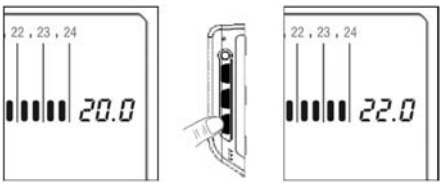
The CH150/151/152 chronothermostat features four different operating modes: Manual, Automatic, Holiday and Jolly (in addition to the OFF function).

“Manual” operating mode

With the Manual operating mode, the chronothermostat adjusts the operation of the heating or cooling system in order to always keep the same temperature. To select “Manual”, press MAN.

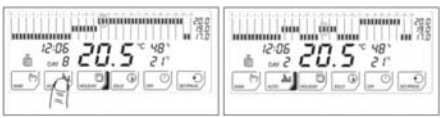


The temperature level can be modified during operation by means of the lower rotary selector located on the right side of the chronothermostat. The temperature can be changed from 2°C to 40 °C by 0.1°C increments.



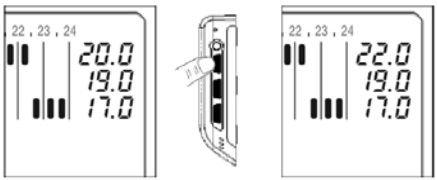
“Automatic” operating mode

With the “Automatic” operating mode, the chronothermostat adjusts the operation of the heating or cooling system by following the profiles defined for the various days of the week. To select “Automatic”, press AUTO.

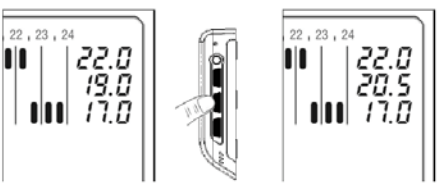


The three temperature levels used can be modified during operation by means of the rotary selectors located on the right side of the chronothermostat.

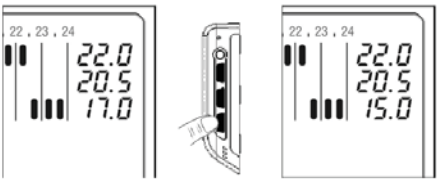
Temperature T3 cannot be lower than temperature T2 or higher than 40 °C.
During Summer operation, temperature T3 features an upper limit of 30°C. When this value is exceeded, T3 will take the OFF value, which will involve switching the system off.



Temperature T2 cannot be higher than temperature T3 or lower than temperature T1.



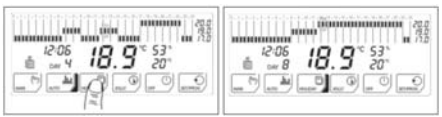
Temperature T1 cannot be higher than temperature T2 or lower than 2 °C.



If no customization has been made, the automatic operating mode will function with the stored temperature profiles, i.e. the preset ones (refer to «Preset programs»). To customize the profiles, refer to «Chronothermostat programming».

“Holiday” operating mode

With the “Holiday” operating mode, the CH150 chronothermostat CH150 adjusts the operation of the heating or cooling system by following one single temperature profile, which is valid for all days. To select “Holiday”, press HOLIDAY.

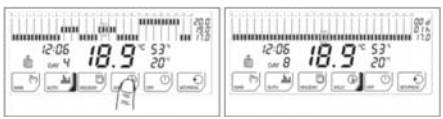


To modify the temperature levels, refer to the description of the “Automatic” operating mode.

When the preset programs are used (refer to «Preset programs»), the “Holiday” mode will follow the profile envisaged for Saturdays and Sundays. To create a customized “Holiday” program, refer to «Chronothermostat programming».

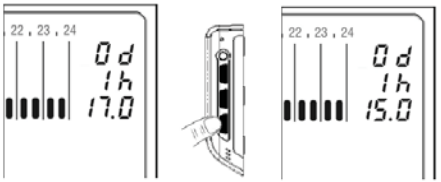
“Jolly” operating mode

With the “Jolly” operating mode, the CH150 chronothermostat interrupts the current operating mode and adjusts the operation of the heating or cooling system to keep the “Jolly” temperature during the entire time set (1 hour to 99 days and 23 hours, by 1 hour increments). After this time – which is displayed like a countdown – has elapsed, the previous operation of the chronothermostat will be resumed. To select “Jolly”, press JOLLY.

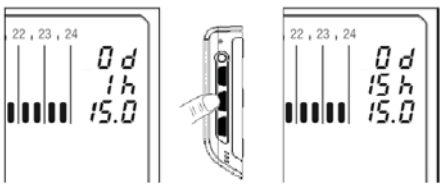


The “Jolly” temperature value and the operating mode duration can be modified by means of the rotary selectors located on the right side of the chronothermostat.

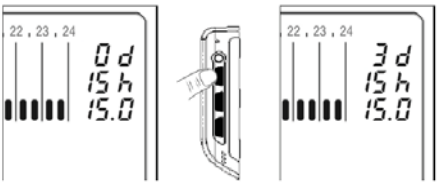
Use the lower rotary selector to modify the temperature level.
The temperature can be modified from 2°C to 40 °C, by 0.1 °C increments.



To set the “Jolly” operating mode duration, i.e. hours («h»), use the central rotary selector. The hours can range from 0 to 23.



To set the “Jolly” operating mode duration, i.e. days («d»), use the upper rotary selector.
The days can range from 0 to 99.



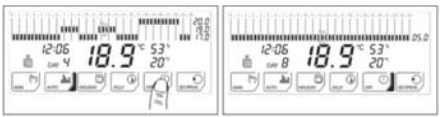
You can interrupt the “Jolly” mode at any time, by selecting any other operating mode.

The “Jolly” operating mode can be used, for instance, to:
• save energy by lowering the temperature when the house is not inhabited at the week-ends or winter vacation, while being sure that a comfortable temperature will exist when the house is inhabited again);
• extend the night heating or cooling beyond the usual time, i.e. when you stay up in the company of your guests.

“OFF” function

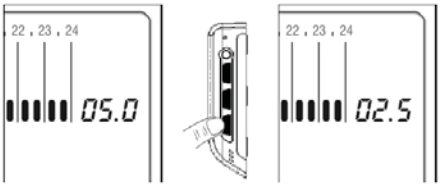
The “OFF” function can be activated by pressing OFF.

Winter operation

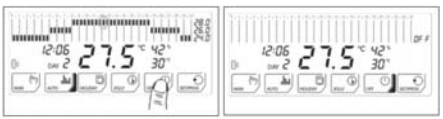


The chronothermostat adjusts the operation of the heating system to keep the “Antifreeze” temperature, in order to reduce the energy consumption and, at the same time, avoid any damage caused by extremely low temperatures.

The “Antifreeze” temperature can be modified from 2°C to 7°C (by 0.1°C increments), by using the lower rotary selector. If a temperature of less than 2°C is set, the system will be fully turned off and the antifreeze protection will be lost.



Summer operation

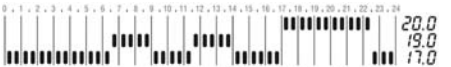


The system will be fully turned off and the “OFF” message will appear on the display, without any temperature profile.

Preset programs

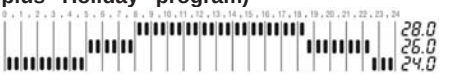
The CH150 chronothermostat features two preset programs (i.e. “Winter” and “Summer”) for quicker start-up.

“Winter” program – working days (Mondays through Fridays)



“Winter” program – public holidays (Saturdays, Sundays and “Holiday” program)

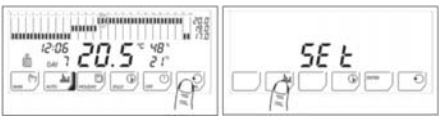
“Summer” program (All days of the week, plus “Holiday” program)



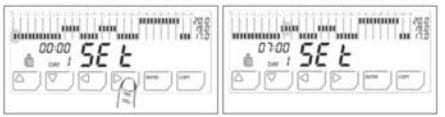
Chronothermostat programming

You can customize the temperature profiles for the “Automatic” and “Holiday” operating modes, so as to adapt them to your own needs. To set new temperature profiles, proceed as follows:

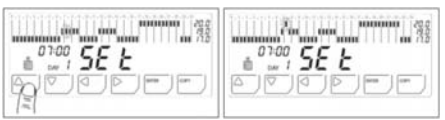
1. Enter the programming menu main page. The operating mode currently used will be interrupted temporarily.
Choose the temperature profile customization function.



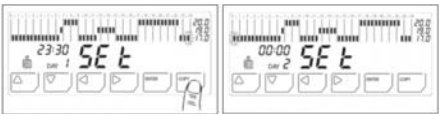
2. The Monday profile (DAY 1) for “Winter” operation (icon) will be displayed. Use the ◄ and ► buttons to move the bar chart blinking segment to the time at which the temperature is to be modified. Each segment equals half an hour. To modify the “Summer” operation profile (icon), press the “Summer/Winter” button on the left side of the chronothermostat.



3. Use the ▲ and ▼ buttons to modify the temperature level (T1, T2 or T3).



4.To directly duplicate the temperature profile by going to the next day, press COPY (to customize every single day separately, refer to step 5 below).



5. Press ENTER to go to the next day, then repeat the operations described starting from step 2 for the other days of the week (the “Holiday” profile will be indicated as DAY 8). To go back to the programming menu main page, use the ENTER button to scroll through the eight days or keep the ENTER button depressed for 3 seconds.

If no button is pressed within the next three minutes, the chronothermostat operating mode previously used will be resumed.

Preset parameter reset

To resume the preset temperature profiles and values (T1-T2-T3-Temperature used with the Manual mode, Temperature used with the Jolly mode, Antifreeze temperature, OFF function), keep the ▲ and ▼ buttons depressed simultaneously when you are in the temperature profile programming mode.

Displaying the temperature detected by the separate probe

To display the temperature detected by the separate probe (only if the latter has been configured as an external probe or floor-mounted probe), the chronothermostat must be configured (refer to <<chronothermostat configuration>>) and the probe must be connected.

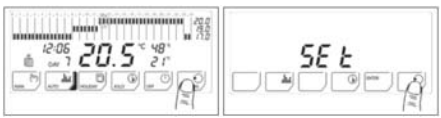
To display the temperature value read by the separate probe, press the button of the operating mode currently used (the temperature will blink).

To display again the temperature detected by the chronothermostat, press again the button of the operating mode currently used (the temperature will not blink any longer).

Statistical data

The CH150 chronothermostat provides a set of statistical data concerning the system operation. To access this data, proceed as follows:

1.Enter the programming menu main page. The operating mode currently used will be interrupted temporarily. Choose the statistical data function.



2. Page 1: number of hours during which the system was operated on the previous day (6 hours in the image). Use the ► button to go to the next page.

3. Page 2: total number of hours during which the system has been switched on and operating since its first start-up (16 hours in the image).

Use the ► button to go to the next page.
Press the ▲ and ▼ buttons simultaneously to reset the total system switch-on hours.

4.Page 3: minimum temperature reached on the current day, and time at which such minimum temperature was reached (15.8°C at 03.15 a.m. in the image). Use the ► button to go to the next page.

5. Page 4: maximum temperature reached on the current day, and time at which such maximum temperature was reached (22.5°C at 09.08 p.m. in the image).

6. Press the ENTER button twice to go back to the operating mode previously used.

Maintenance

To clean the chronothermostat use a soft cotton cloth and no detergent. Do not use paper handkerchiefs to clean the touch screen.

Keyboard lock

To clean the chronothermostat without changing accidentally its settings, press the Summer/Winter key in order to activate the keyboard lock. When the keyboard lock is ON, symbol 🔒 on the display will turn on. The display can now be cleaned, each time a key is pressed symbol 🔒 will flash. To restore keyboard operation, press again the Summer/Winter key, symbol 🔒 will turn off.

Touch Screen

The touch screen surface is highly scratchable. Only use your fingers to touch the screen. Never use pens, pencils or other pointed objects.

Replacing the batteries

When the battery charge starts to lower, symbol 🪫 on the display will start flashing.
If the “bAtt” parameter is set to “On” or to “Off” (see paragraph <<configuring the chrono-

thermostat>>) and batteries are not replaced within 15 days, the chronothermostat will turn off automatically and the display will show the message “OFF” or “On” instead of the temperature value.
Settings and data are however stored in the non-volatile memory.

To remove the chronothermostat from the base proceed as follows:
• remove the jack plug from the telephone activator, if any;
• pull the left and right sides of the chronothermostat, without applying force to selectors.

If after replacing the batteries, the display only shows the message OFF or On, press the icon key with ENTER after refitting the chronothermostat on the base.

With the “bAtt” parameter off (see paragraph <<configuring the chronothermostat>>), and symbol  flashing, batteries shall be changed as soon as possible to prevent that battery charge becomes insufficient for regular chronothermostat operation.

Important: Standard battery life is approx. 1 year. You are recommended to replace batteries at the beginning of system operating season to prevent batteries from running down when you are away from home, e.g. during Christmas holidays.
The batteries shall be properly disposed of in special containers.

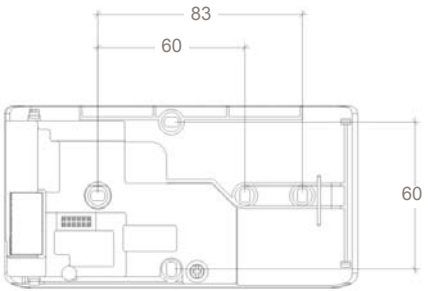
Installation

Caution: The chronothermostat shall be installed by qualified personnel only, in compliance with the current regulations in force.

Chronothermostat installation involves the following operations:
• Fastening the base.
• Electric connections.
• Fitting the batteries.
• Fastening the chronothermostats onto the base.
• Configuring chronothermostat parameters.

Fastening the base

The chronothermostat comes with a base suitable for wall mounting or for flush-mounting in three-module rectangular or round boxes.



SPACING DIMENSIONS FOR FIXING THE BASE

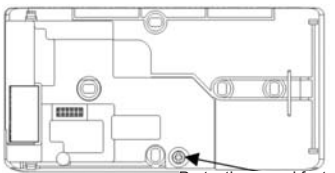
Separate the base from the chronothermostat levering on the slot located at the bottom of the base by means of a proper tool.

Make sure that the base is properly secured and it is not deformed. Check that the chronothermostat multi-pole connector is placed at the bottom left corner.

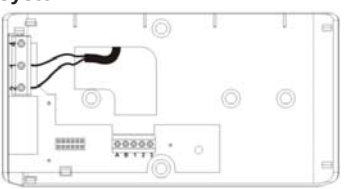
To ensure correct operation the base shall be installed at about 1.5 metres above the floor level and far from heat sources (heating radiators, direct sunlight, etc.), doors and windows.

Electric connections

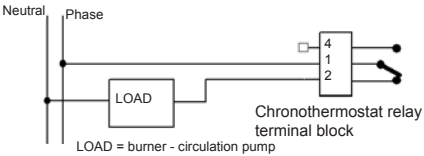
Before making connections, remove the terminal protection guard (keep it together with the fastening cross-slotted screw).



Connecting the heating or air-conditioning system

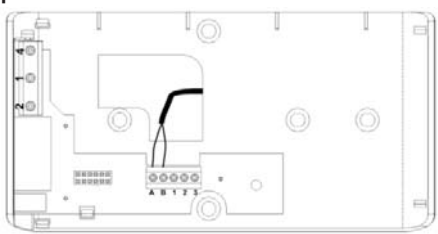


Connect the two wires of the heating or air-conditioning system to the terminals 1 and 2, as shown in the figure.
Terminals are suitable for flexible cables with 2.5 mm2 max section.
Terminal 4 is free and may be used for signalling or other use, as necessary.



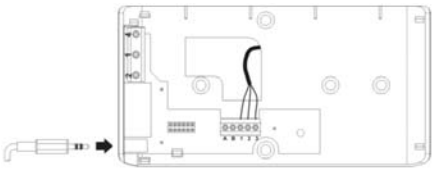
Warning: Make sure the relay load value is not exceeding the values specified in «Technical data».

Connecting the separate temperature probe



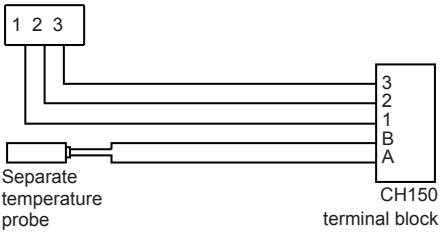
Connect the two wires of the separate temperature probe to terminals A and B, as shown in the figure.

Connecting the telephone activator



Connect the three wires of the telephone activator to terminals 1, 2 and 3, as shown in the figure.
As an alternative, the activator may be connected through the 3.5 mm jack plug set on the left side. Once connections are over, refit the terminal protection guard removed previously.

CTx terminal block



Fitting the batteries

Fit two long-life 1.5 V AA alkaline batteries into the back of the chronothermostat, observe the specified polarity. After fitting the batteries the chronothermostat will turn on automatically.

Fastening the chronothermostat onto the base

Press by hand the chronothermostat onto the base, make sure the multi-pole connector fits properly. The chronothermostat will click into position.

Configuring the chronothermostat

Warning: The chronothermostat shall be configured by qualified personnel only.

Chronothermostat configuration enables to customize the operating parameters. To open the configuration program, proceed as follows:

1. Press the SET / PROG key [key 6]. The operating mode being currently used will be temporarily stopped and it will be resumed automatically at the end of programming.
2. Keep the SUMMER / WINTER switching key [key 10] pressed for about 5 seconds.

Every configuration parameter featuring preset settings is identified on the display by an index and a writing. To change parameter values use keys ▲ [key 1] and ▼ [key 2]; use key ► [key 4] to move across parameters.

To go back to the initial page of the programming menu, press the ENTER key [key 5] which will save changes.

If no key is pressed within 3 minutes, the chronothermostat will quit the configuration program and will resume the operating mode being used previously, without saving changed settings.

To cancel changed settings and to reset preset configuration parameter values, keep keys ▲ [key 1] and ▼ [key 2] pressed simultaneously for about 4 seconds.

Index	Parameter	Writing	Values	Preset value
1	Type of connected card	COn	rEL / rAd / ---	none
2	Temperature scale	CELS o FHAr	°C / °F	°C
3	Type of regulation	Std o ProP	Std / ProP	Std
3A	Thermal differential	DIFF	HI / LO	LO
3A	Regulation band	BAnd	1 °C – 4 °C (step 0.1°C)	2 °C
3B	Regulation period	Per	5 / 10 / 20 minutes	10 minutes
4	Separate temperature probe configuration	Sect	--- / FLO / In / Out	---
4A	Floor temperature limit	Tflo	15 °C – 45 °C	27.0 °C
5	Ambient temperature correction	Corr	-4.0 °C to +4.0 °C	0.0 °C
6	Optimization	Opt	ON/OFF	OFF
6A	Max. optimization duration (hours)	OPtH	1h – 5h	2h
7	Pump anti-seizure	Pu	ON/OFF	OFF
8	Low battery	bAtt	--- / On / OFF	OFF
9	Software release	SOFt	xxx	xxx

Type of connected card
The chronothermostat can check whether the base is connected. If it is not connected dashes will be displayed whereas when it is connected the writing rEL is displayed. Writing rAd is displayed in radiofrequency versions.

Temperature scale
To select the temperature scale to be displayed: Celsius (centigrade) or Fahrenheit. When choosing the Fahrenheit scale, temperatures may range between 0.0 and 99.9 °F.

Type of regulation
To select the temperature regulation mode: differential (Std) or proportional (ProP). This parameter is used for heating only.

Thermal differential
To set the thermal differential value to be used

when choosing the differential temperature regulation mode. Continuous switching on and off can be avoided by choosing a proper differential value according to the thermal inertia of the heating system. It is recommended to set a low thermal differential (LO) in heating systems with radiators and high thermal differential (HI) in heating systems with fan-coils.

Regulation band
To select the proper value according to the thermal gradient of the system (broadband for high gradients– narrow band for low gradients).

Regulation period
To set the regulation cycle length (ON period + OFF period) when the proportional temperature regulation mode is chosen. Select 5 minutes for low-inertia systems (fan-coil type), 10 minutes for average-inertia systems (aluminium radiator type) and 20 minutes for high-inertia systems (cast-iron radiator type).

Separate temperature probe configuration
The chronothermostat may be connected to a separate temperature probe. Probe operation is determined by this parameter.
• **Probe off** (---): the temperature value detected by the probe is not used (although the probe is connected).
• **Floor probe** (FLO): when the temperature detected by the probe reaches the value set in the Floor temperature limit parameter, the system will be turned off regardless of the temperature read by the chronothermostat.
• **Ambient probe** (In): system regulation is based on the temperature value detected by the separate probe. This temperature value is displayed instead of the temperature value detected by the internal probe of the chronothermostat. The separate ambient probe is used when the chronothermostat is necessarily located in a room other than the one the temperature of which is to be controlled;
• **External probe** (Out): has no effect on system regulation, it is just used to know another temperature, e.g.: the outside temperature.

Floor temperature limit
To set the temperature limit value read by the separate probe which turns the system off when the floor probe is used (for floor heating systems).

Ambient temperature correction
To sum/subtract an offset value to/from the temperature value read by the chronothermostat.

Optimization
To calculate the advance switch-on time required to reach the desired temperature at the set time, considering the system thermal inertia. Optimization takes place only at the first switch-on of the day, i.e.: the first programmed passage from a temperature to a higher one.

Max. optimization duration
To set the max. duration (expressed in hours) of the advance switch-on time calculated by optimization.

Pump anti-seizure
To turn the system on for 1 minute a day (h 23.58), thereby operating the water circulation pump and preventing it from seizing. This takes place only if the system has never been turned on during the day.

Low Battery
To determine the relay status when batteries are flat for over 15 days. If this parameter is excluded (---), the chronothermostat will keep on controlling the relay as required by regulation until the remaining battery charge allows for it.

Technical data

Power supply	2 AA alkaline batteries, 1.5 V
Battery life	about 1 year
Outputs	1 single-pole relay voltage 250 Va.c. rating 5(3) A
Inputs	Telephone activator Separate temperature probe
Electric connections	Screw clamps 3.5 mm two-pole jack plug
Insulation	Double ⧈
Protection	IP20
Setting storage	Non-volatile memory
Micro-disconnection	1BU
Software	Class A
Temperature regulation range	2 °C – 40 °C
Anti-freeze temperature regulation range	2 °C – 7 °C
Max. temperature	T45
Local indication	Backlighted LCD display
Local controls	Touch screen, 6 icon keys 1 central backlighted area 3 rotary selectors
Dimensions (L x H x D)	155 X 91 X 20
Separate temperature probe distance	10 m max
Reference thermal gradient	4 K/h
Relative humidity displayed value	20% - 90%
Pollution degree	2
Impulse Voltage	4000V
Complies with EN 60730-1 and second parts	
ErP classification: ErP Class IV; 2% (EU Reg. 811/2013 - 813/2013)	

Fantini Cosmi S.p.A. reserves the right to make whatever technical and manufacturing modification without prior notice.

NOTES

DISPOSAL OF PRODUCTS

The crossed out wheeled dust bin symbol indicates that products must be collected and disposed of separately from household waste. Integrated batteries and accumulators can be disposed of with the product. They will be separated at the recycling centres. The black bar indicates that the product was placed on the market after August 13, 2005. By participating in separate collection of products and batteries, you will help to assure the proper disposal of products and batteries and thus help to prevent potential negative consequences for the environment and human health. For more detailed information about the collection and recycling programmes available in your country, please contact your local city office or the shop where you purchased the product.

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