FantiniCosmi

WEEKLY PROGRAMMABLE THERMOSTAT
WITH INTEGRATED GSM

CH140GSM

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PAG.

PACKAGE CONTENTS

1 PROGRAMMABLE THERMOSTAT
1 USER MANUAL

1. INSTALLATION

The CH140GSM programmable thermostat is to be wall-mounted or installed on a recessed box, with 3 modules or round, at a height of about 1.5 m from the ground.

PERFORM THE FOLLOWING STEPS:

1. Disconnect the power to the electrical system by actuating the main switch of the electrical panel
2. Separate the rear baseboard from the body of the programmable thermostat by using a tool on the relevant slot (see Figure 1)
3. Remove the insulation protection on the baseboard by unscrewing the specific captive screw.
4. Make the electrical connections as shown on page 5.
5. Secure the baseboard to the wall or to the recessed box, using the screws supplied.
6. Reposition the insulation protection by tightening the screw.
7. Open the SIM-holder compartment at the back of the programmable thermostat, as shown in Figure 2.
8. Insert a SIM* (NOTE pag. 4), complying with the direction shown in Figure 3 (see pag. 4) and close and tighten the flap of the SIM-holder.
9. Press the body of the CH140GSM to the baseboard secured to the wall and couple.
10. Restore the power of the electrical system.

push
to release
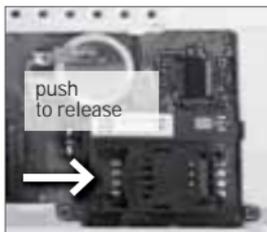
Figure 1   Figure 2

Figure 3
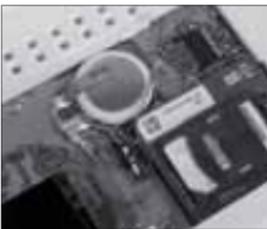
⚠ *** NOTE** The SIM used must conform to the GSM 11.12 phase 2+ standard (in practice, any SIM of regular mobile operators but not the USIMs of mobile operator: TRE). It must be linked to a top-up voice with SMS contract (if necessary, verify the credit) or with a subscription contract and **the PIN code must be disabled**.
Before inserting the SIM card it is advisable to verify that it works by using it in a mobile phone and trying to send and receive an SMS.

After inserting the SIM and switching the CH140GSM on, any SMS messages that have not yet been delivered or sent in the first moments of operation will be cancelled.

⚠ ATTENTION: the 2 auxiliary inputs must be connected to contacts that are dry and voltage-free and with cables no longer than 3 m.

GSM FUNCTIONALITY VERIFICATIONS

The programmable thermostat connection to the GSM network can be detected by the antenna symbol and three bars.

The antenna symbol flashes if the module is not registered to the GSM network (e.g. no coverage, SIM not inserted or blocked by PIN, etc.).
Once the registration is complete, the antenna lights up steady together with any bars indicating the signal strength.

On **PAG08** of the **SETUP** menu you can see the quality of GSM coverage in real time; the values are updated every three seconds. This feature is useful for testing during installation if the position assumed is appropriate or not.

The following table shows the signal values and the corresponding messages shown on the display.

Example: GSM: 18.0 means that the signal is good (two bars) and the communication has no errors.

SYMBOL					
	flashing				
VALUES "RS"	0÷1	2÷9	10÷14	15÷19	20÷30	99
Signal level	None	Low	Acceptable	Good	Excellent	n.r.

"BE" VALUE	0= <0.2%	1= 0.2÷0.4%	2= 0.4÷0.8%	3= 0.8÷1.6%	4= 1.6÷3.2%
	5= 3.2÷6.4%	6= 6.4÷12.8%	6= >12.8%	99= n.r.	
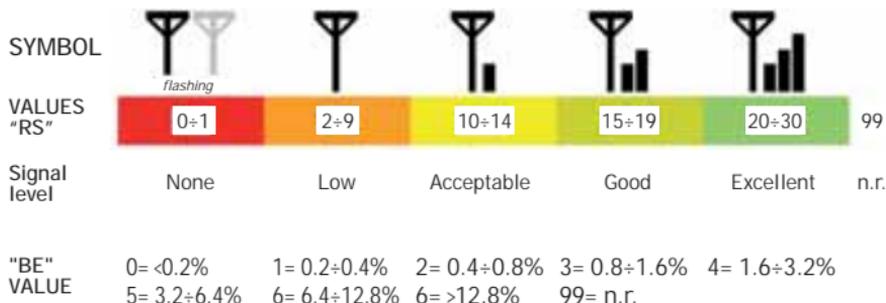
NOTE: during the first seconds after the programmable thermostat is switched on, any anomalies of the SIM are indicated by the appearance of the following error messages:

- ERR 310 = no SIM; verify that the SIM is inserted correctly and close the latch of the SIM holder;
- ERR 311 = SIM has PIN protection; remove the SIM and insert it into a phone to remove the PIN protection function.

N.B.: Any other error codes that may appear must be noted to then contact the technical support.

2. ELECTRICAL CONNECTIONS

⚠ ATTENTION: THE INSTALLATION MUST ONLY BE CARRIED OUT BY SKILLED PERSONNEL
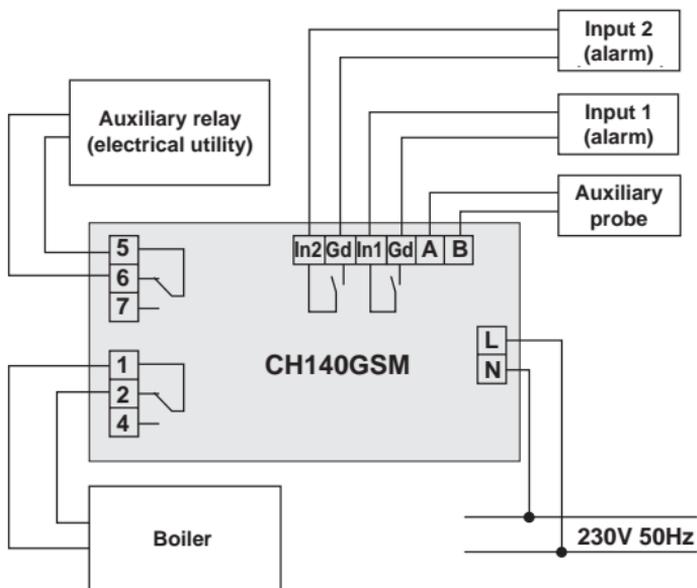
⚠ ATTENTION: before wiring, make sure the power has been disconnected from the electrical system from the main switch on the electrical panel

⚠ ATTENTION: the cable length of the auxiliary probe must not exceed 3 metres.

NOTE: The programmed parameters will not be lost during blackout periods since all the settings are saved in a non-volatile memory.
Even if the power supply is not available for long periods, the clock/calendar operation is guaranteed by an internal battery.

3. QUICK GUIDE TO PROGRAMMING

DESCRIPTION OF KEYS

The programmable thermostat is fitted with 6 keys, the function of which varies depending on the situation and is described by the symbol that appears on the display in line with the key.

GSM antenna

day of the week

relay ON summer
relay ON winter

graphic section:
temperature/clock profile
messages

ambient temperature
Celsius / Fahrenheit

programs

summer / winter

flat battery symbol

time

secondary function

primary function

6 function keys
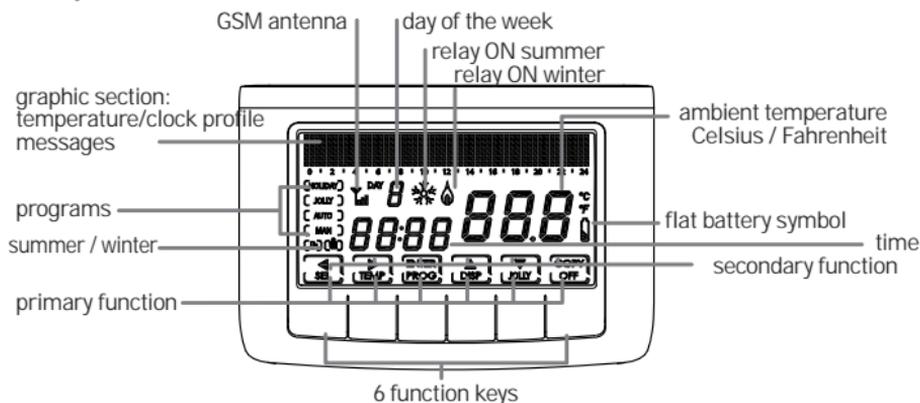
N.B.: the first time a key is pressed will have no effect other than turning the display light for it to be seen better.

SETTING THE TIME AND DATE

1. After switch-on, press the **PROG** key briefly: "Setup" appears; then press ▶, to access the "Hours" page. Use the ▲ and ▼ keys to set the hours and then press ▶ to set the "Minutes".

2. Press ▶ again to select the Year, the Month and the Day in order

3. Press ▶ again to select whether to disable the automatic summer/winter switch-over: initially, this function is enabled, however, it can be disabled by selecting "NO" with the ▲ and ▼ keys.

4. You can always return to the previous page by pressing ◀.

5. Press **ENTER** to exit the Setup menu.
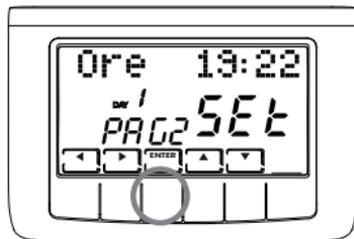
OPERATING PROGRAMS

The CH140GSM programmable thermostat allows for different operating modes, called programs:

■ "AUTO" WEEKLY PROGRAM:
you can associate every half hour to one of the four set temperatures for each day of the week. This is the program that appears when the programmable thermostat is switched on and in general, is the most used.

■ "HOLIDAY" DAILY PROGRAM:
just like the AUTO program, you can select one of the 4 set temperatures for each half hour, however, this sequence will be repeated, identical, every day.

■ "JOLLY" TEMPORARY PROGRAM:
you can choose to maintain a certain temperature for a given number of hours, after which it will return to the previously active program.

■ "MAN" MANUAL PROGRAM:
the programmable thermostat maintains a fixed temperature, specified from time to time, for unlimited time, until another program is selected.

■ "OFF/ANTI-FREEZE" SYSTEM IS OFF OR WITH ANTI-FREEZE PROGRAM:
the system remains off or alternatively it will maintain a very low temperature (2 to 7°C), to prevent the liquid in the heating system from freezing.

PROGRAMMABLE TEMPERATURES

The operating temperature settings can be accessed in the **AUTO** and **HOLIDAY** programs.
■ Temperatures **T1, T2 and T3** can be represented with values ranging from 2° to 40°C,
■ The **T anti-freeze (TA)** temperature can range from 2° to 7°C or be set to **OFF** (that is, system off).

These are the temperatures that can be set when configuring the daily program:
■ The **MANUAL** program has its own specific temperature **(TMan)**, just like the **JOLLY (Tj)** program, which are set on the respective screens and that range from 2° to 40°C.
■ The **ANTI-FREEZE/OFF** program follows the **TA** temperature that can range from 2° to 7°C; alternatively, it can be set to **OFF** for the system to switch off.

SETTING THE OPERATING PROGRAMS

■ SELECTING THE PROGRAM
Press the **SEL** key to select the various operating programs, in cyclical sequence:
AUTO -> MAN -> OFF -> HOLIDAY -> AUTO.

NOTE: the JOLLY temporary program is not included in the sequence of programs but is selected directly with the JOLLY key.

■ TEMPERATURE SETTINGS
In the AUTO, HOLIDAY and OFF programs press the **TEMP** key to change the values of the 4 set temperatures: pres the TEMP key repeatedly for the value T1, T2, T3 and Ta to appear in sequence; go to the T you wish to modify and use the arrows ▲ and ▼ to increase or decrease the temperature by a tenth of a degree at a time.
Use the arrow ◀ to go back to the beginning.
Consider that T1 will always be less or equal to T2, and T2 of T3.

In the JOLLY program, the **TEMP** key alternates the display of the set temperature Tj and the hours left for the program to end: these two values can be changed using the ▲ and ▼ keys.
In the MAN program you can modify the fixed temperature TMan using the ▲ and ▼ keys.

■ MODIFYING THE DATE AND TIME IN PROGRESS
Briefly press the **PROG** key to enter the "SETUP" menu, in which you can change the time, the date, the winter/summer mode and the automatic daylight saving function.

■ CUSTOMIZING THE WEEKLY "AUTO" AND DAILY "HOLIDAY" PROGRAM
Keep the **PROG** key pressed until "CONFIG" appears. In this menu you can program the weekly profiles (AUTO program) and daily (HOLIDAY program) and set the advanced functions (refer to the subsequent sections for their description).

NOTE: if "SETUP" appears instead of "CONFIG", you have released it too quickly and must press **ENTER** to go back to the normal operating mode and try again.

When entering the "CONFIG" menu, the page that allows you to select the desired temperature (T1/T2/T3/Ta) for every half hour of the day indicated appears (from 1 to 7 to indicate the days from Monday to Sunday).

NOTE: T1/T2/T3/Ta are displayed on the right side of the display with the symbols: $t1 - t2 - t3 - tA$

Use the ▶ and ◀ keys to move a half hour to the right or left.

Use the ▲ and ▼ keys to switch from one set temperature to another.

Use **PROG** (pressed briefly) to go to the next day (DAY 1 -> 2 -> 3 -> 4 -> 5 -> 6 -> 7 -> H).

Press **COPY** to copy the temperature profile of the current day to the next day.

The Correction parameter page is accessed after H (profile of the Holiday daily program).

Use **PROG** (pressed for long) or ◀ at the beginning of day 1 to go directly to the Correction page.

From the Correction page onwards, use **ENTER** to exit from the "CONFIG" menu.

■ "JOLLY" PROGRAM SETTINGS
In all programs except MAN, the temporary program is selected by pressing the **JOLLY** key: this program allows you to define the desired temperature and its duration in hours (up to a maximum of 240, that is, 10 days).
For example, it may be useful to keep a lower temperature throughout the weekend if you are away from home.
Once this program is accessed, you can change the duration, which is initially an hour, and increase the number of hours using the ▲ or decrease them using the ▼.

Press **TEMP** to display and change the Tj temperature using the ▲ and ▼ keys.

Press **TEMP** again to go back to displaying the duration of the JOLLY program. When this time elapses, it returns to the initial program.

■ "OFF/ANTI-FREEZE" PROGRAM SETTINGS
Pressing **OFF** from any operating program will switched the programmable thermostat to off/anti-freeze mode.
The anti-freeze temperature (Ta) can be set with the **TEMP** key from OFF (boiler always off) to a temperature between 2.0 and 7.0°C, with a precision of a tenth of a degree, using the ▲ and ▼ arrows.
Use the ◄ arrow to return to OFF.
Press **OFF** again to go back to the previous operating mode.

■ ALTERNATIVE DISPLAYS
In the AUTO and HOLIDAY programs you can view other information instead of the temperature profile by pressing **DISP** repeatedly.
When it is pressed once the temperature set for the current half hour is displayed; when pressed twice it will display the date; when pressed three times it shows the temperature of the external sensor (if installed); and when pressed four times it returns to the initial temperature profile.

4. THE FUNCTIONS IN DETAIL

PROGRAMS AVAILABLE

CH140GSM has different operating modes (programs):
- "AUTO" weekly program
- "HOLIDAY" daily program
- "JOLLY" temporary program
- "MAN" manual program
- system is off or with "OFF" anti-freeze program

- **"AUTO" WEEKLY PROGRAM**
  In the AUTO mode you can use 4 temperature levels (Ta, T1, T2, T3) according to a setting of 30 minutes within 24 hours of 7 days. The days are numbered from 1 to 7 and correspond to the seven days of the week, starting with Monday. To simplify programming, you can set the first day and copy it to the others.

  By default, days 1 – 5 (Monday to Friday) are:

  00:00 – 06:30 T1
  06:30 – 09:00 T2
  09:00 – 11:30 T1
  11:30 – 14:00 T2
  14:00 – 17:00 T1
  17:00 – 22:30 T3
  22:30 – 24:00 T1

  winter program
  Monday-Friday
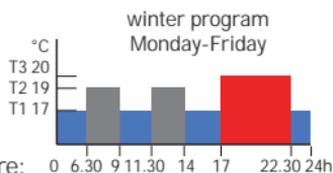
  whereas days 6 and 7 (Saturday and Sunday) are:

  00:00 – 08:00 T1
  08:00 – 11:30 T2
  11:30 – 23:00 T3
  23:00 – 24:00 T1

  winter program
  Saturday-Sunday
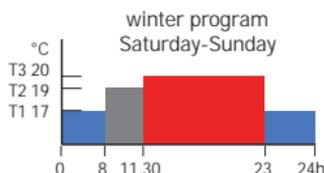
The value of the 4 temperatures can be set using the **TEMP** function.

The profile (time variation) of the temperatures can be set using the **PROG** function.

summer program
Monday-Friday
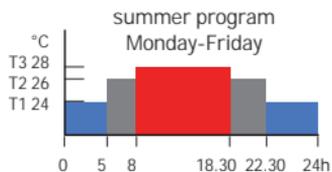
In the summer mode (air conditioning), the default program is that shown in the figure.

■ "HOLIDAY" DAILY PROGRAM

In the HOLIDAY mode you can use 4 temperature levels according to a setting of 30 minutes within 24 hours of the day.

You then obtain a daily program, separate from the days of the week. The default profile of the temperatures is:

00:00 – 08:00 T1
08:00 – 11:30 T2
11:30 – 23:00 T3
23:00 – 24:00 T1
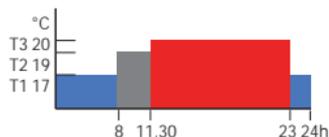
The value of the temperatures can be set using the **TEMP** function.

The profile (time variation) of the temperatures can be set using the **PROG** function.

■ JOLLY

The JOLLY mode allows you to set a temperature (Tj) for a number of hours (1 to 240). It is used when you want to introduce a temporary change to the programming without changing the parameters, for example to maintain a high temperature longer for an evening

with friends or keep it low due to absence during the weekend.

If you have accessed JOLLY with the proper function key, once completed it automatically returns to the current programming.
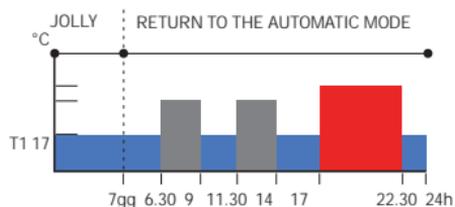
■ **MANUAL**

The MAN mode allows you to manually set a fixed temperature (Tman), varying between +2.0 and +40.0 degrees, with no expiry and without having to change the weekly or daily program.

It can be used for example to keep the house at a temperature different from those of the daily programs during absences, or to switch the system on remotely to bring it to a constant temperature.

T1 temperature
set between 2 and 40°C

°C

T3 21

24h
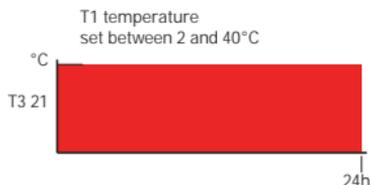
■ **OFF**

The OFF mode is used when you want to switch the system off.

It uses the TA temperature (anti-freeze) as a reference, to guarantee the protection of the system at low temperatures.

TA is normally set to +5 degrees but can be set to OFF, obtaining therefore the total shutdown of the boiler. Weekly or daily programs remain unchanged.

PROGRAMMABLE TEMPERATURES

The system requires 4 different temperature levels, three for normal use and one, called "anti-freeze", to be used when you want to keep the boiler off but without running the risk of the system liquid freezing.

The programming of the three T depends on the reciprocal values, in the sense that T1 cannot be higher than T2, T2 cannot be higher than T3 or lower than T1 and T3 cannot be lower than T2.

You must therefore pay attention to their programming, which is achieved with the **TEMP** key.

■ T1 varies between +2.0 and +T2 degrees, with changes every tenth of a degree [default 17.0]
■ T2 varies between +T1 and +T3 degrees, with changes every tenth of a degree [default 19.0]
■ T3 varies between +T2 and +40.0 degrees, with changes every tenth of a degree [default 20.0]
■ TA (anti-freeze) varies between +2.0 and +7.0 degrees, with changes every tenth of a degree, or it can be OFF, that is, the boiler always remains off. [default 5.0].

KEYS AND ADVANCED FUNCTIONS

USING THE **SEL** KEY

The **SEL** key is used to select the operating mode of the programmable thermostat, according to the following programs:

- ◼ HOLIDAY
- ◼ AUTO
- ◼ MANUAL
- ◼ OFF

To change the preset program, press the **SEL** key in sequence (cyclical). The first 3 conditions are indicated by a small message on the left side of the display, whereas OFF appears in the graphic area at the top.

USING THE **TEMP** KEY

- ◼ In AUTO, HOLIDAY and OFF
    - ▪ Pressing **TEMP** will let you access the programming of 4 temperatures that can be used in these conditions.
    - ▪ Use the ▲ and ▼ arrows to vary the temperatures, while bearing in mind that T1 cannot be higher than T2, T2 cannot be lower than T1 and higher than T3 and T3 cannot be lower than T2.
    - ▪ Use the **TEMP** key to go to the next temperature (cyclical):
    - ▪ T1>T2>T3>Ta>TLOW >T1.
    - ▪ Use the ◀ arrow to go back to the initial window.

- ◼ In JOLLY
    - ▪ Use the **TEMP** key to go to the programming of Tj.
    - ▪ Use ▲ and ▼ to change Tj (between +2 and + 40°) and the duration (1 hour interval).
    - ▪ Use the ◀ arrow to go back to the initial window.

USING THE **PROG** KEY

- ◼ **PROG** (pressed briefly) ⇨ SETUP

    - ▪ WINTER/PAG01/Set
      with ▲ or ▼ you switch from Winter to Summer and vice versa
      with ▶ you change page, with **ENTER** you exit **PROG**.

    - ▪ HOURS HH: MM/PAG02/SEt
      with ▲ you increase the hours cyclically and with ▼ you decrease them.
      with ▶ you change page, with **ENTER** you exit **PROG**.

    - ▪ MIN. HH: MM/PAG03/Set
      with ▲ you increase the minutes cyclically and with ▼ you decrease them.
      with ▶ you change page, with **ENTER** you exit **PROG**.

    - ▪ YEAR: YYYY/PAG04/Set
      with ▲ you increase the years and with ▼ you decrease them
      with ▶ you change page, with **ENTER** you exit **PROG**.

    - ▪ MONTH: MM/PAG05/Set
      with ▲ you increase the months cyclically and with ▼ you decrease them
      with ▶ you change page, with **ENTER** you exit **PROG**.

    - ▪ DAY: DD/PAG06/Set
      with ▲ you increase the days cyclically and with ▼ you decrease them
      with ▶ you change page, with **ENTER** you exit **PROG**.
      NOTE: if the date set, the programmable thermostat automatically determines
      the day of the week.

- DST YES/PAG07/Set

  Select daylight saving time automatically, applicable in European countries and some others. This settings allows the time to be automatically updated when the hour is moved (March and October). Use ▲ or ▼ to switch between YES and NO.

  Use ▶ to go back to pag.1 (Winter/Summer); use **ENTER** to exit **PROG**.

- GSM: RS,BE/PAG08/SEt

  This page displays the level of the signal (RS= 2 digits) and the error rate (BE= two digits) of the GSM line.

  The table on page 5, shows the key of the values concerning the coverage quality.

  Example: GSM: 18.0 means that the signal is good (two bars) and the communication has no errors.

■ **PROG** (pressed for long) ⇨ CONFIG.

The screen of day 1 is shown, with the graph of the temperatures every half hour, the indication of the half hour and the associated temperature ($t1 - t2 - t3 - tA$).

Day 1 corresponds to Monday, and so on. Day H is the Holiday, which does not vary during the week.

Use ▶ to move a half hour forward

Use ▲ or ▼ to move up or down from tA to t1 to t2 to t3.

Use **PROG** (pressed briefly) to change the day (1, 2, 3, 4, 5, 6, 7, H).

Use H to go to page 01 (Correction).

Use **PROG** (pressed for long) to go directly to page 2.

Use **COPY** to copy the temperature profile of the current day to the next day. From page 01 onwards use **ENTER** to exit the programming.

Use ◀ to go to the previous half hour (even of the previous day)

Use ◀ at the beginning of day 1 to go directly to page 01 (correction).

- Correction/PG01/XX.X°

  It allows you to change the read temperature, which may not indicate the actual temperature felt due to the installation being recessed in the wall or maybe at a non-optimal height.

It is recommended to calibrate it by comparing it with a thermometer placed at a desired height/area.

Use ▲ and ▼ to change the value on the display of the temperature.

Use ▶ to go to the next page and **ENTER** to exit.

- Celsius/PG02/XX.X°

  It allows you to choose the display range of the temperature between Celsius and Fahrenheit.

  Use ▲ or ▼ to switch between Celsius and Fahrenheit.

  Use ▶ to go to the next page and **ENTER** to exit.

- Light OFF-ON Xs/PG03

  It allows you to adjust the backlight of the display (light blue). You can choose to not have it (OFF) or to have it with a set duration between 1 and 29 seconds.

  Use ▲ or ▼ to switch from OFF to ON, and select the duration (1-29 sec.).

  Use ▶ to go to the next page and **ENTER** to exit.

- Int. Light X/PG04

  It allows you to change the brightness of the display (9 levels).

  Use ▲ or ▼ to change the brightness (1--9).

  Use ▶ to go to the next page and **ENTER** to exit.

- English/PG05

  It allows you to change the language used for programming.

  Use ▲ or ▼ to cyclically go from one language to another.

  Use ▶ to go to the next page and **ENTER** to exit.

- Block? NO(YES)/PG06

  It allows you to block the keyboard with a 4-digit numerical code. It only works once and must then be enabled again.

  Use ▲ or ▼ to switch between NO and YES. Once **ENTER** is pressed a password is requested which is entered using the ▲ or ▼ arrows by selecting the digits with ▶ and ◀

Use **ENTER** to save it and goes back to the normal operating display, in which only the function key **ENTER** appears. Pressing it will require the password, which must be entered with the ▲ and ▼ arrows, follows by **ENTER**. The display goes back to the normal programming, thereby enabling all the functions.

Use ▶ to go to the next page and **ENTER** to exit.

▪ Reset? NO(YES)/PG07

Use ▲ or ▼ to switch between NO and YES. Press **ENTER** while "YES" is displayed for all parameters (except the date and time) to be reset to the default values.

Use ▶ to go to the next page and **ENTER** to exit.

▪ CH140 V1.20/PG08

On this page, the software version of the programmable thermostat.

Use > to go to the next page and **ENTER** to exit.

▪ EXT IN : ---/PG12

It allows you to change the management mode of the auxiliary input using the keys and to change:

---: non active

Connect a probe EC18 - EC19 - EC20 to set:

DIS: displaying the temperature;

ADJ: adjustment of the ambient temperature by means of the external probe.

▪ Relay2:SMS/PG13

It allows you to use the Relay 2 of CH140GSM for different uses. In fact, connecting electrical utilities to terminals 5-6-7 of Relay 2 and configuring it appropriately in this sub-menu, allows you to add ancillary functions to CH140GSM.

The available functions are:

SMS: Relay 2 is switched on (that is, it closes contacts 5: and 6 and opens 5 and 7) with the SMS command #ON and is switched off (that is, opens contacts 5 and 6 and closes contacts 5 and 7) with the SMS command #OFF.

SUM: Relay 2 is used to adjust the temperature but only if the Summer setting is selected while only Relay 1 is in Winter mode. This way, you can use the CH140GSM for heating and cooling without having to change the electrical connection when the season changes. Relay 2 does not implement the SMS commands #ON and #OFF.

PRG: Relay 2 will switch on and off according to the programming of the "DAY A" time profile whose programming page is accessed by pressing the ▶ key after selecting the PRG mode.

In this way you can control, for example, the irrigation system or the lamp of an aquarium every half hour within 24 hours, totally independent from the other functions of the CH140GSM.

The switch on and off times are set by selecting PRG and pressing the ▶ key for the daily profile and the word OFF to be displayed.

Use ▶ and ◀ to move a half hour to the right or left;

Use the ▲ and ▼ keys to enable (ON) or disable (OFF) the relay.

Use ENTER to go back to page 1 (correction) which you can exit by pressing ENTER or go to the time profile settings by pressing ◀ .

USING THE DISP KEY

The DISP key allows you to view windows with different information, only in AUTO and HOLIDAY mode, depending also on the operating mode.
The following windows can be displayed:

- Profile of the day / hour:min / Tamb
- Current set temperature (e.g. T3=20.0°) / hour:min /Tamb
- Dd/Mm/Yyyy / hour:min /Tamb

USING THE **JOLLY** KEY

The **JOLLY** key allows you to replace the normal operation with a forced temperature at a fixed value for a preset interval.
The following window is displayed:

- Duration of the JOLLY mode (HH h MM m) / hour:min / Tamb

Use the ▲ and ▼ arrows to change the duration of the JOLLY mode, at one hour intervals. The Jolly temperature is set by pressing the **TEMP** key, which displays a window such as the following:

- Tj=xx.x° / hour:min / Tamb

This window appears on the display until the **TEMP** key is pressed again, which will return to the previous display, indicating the duration of the mode.

Exit from the JOLLY mode, before it elapses, by setting the number of hours to zero using the ▼ arrows and waiting one minute to automatically return to the initial mode, or use the **SEL** key to go to the desired operating mode, with the AUTO, MAN, HOLIDAY, OFF cycle.

USING THE **OFF** KEY

The **OFF** key allows you to switch the system from any operating mode to off. The following window is displayed:

- OFF / hour:min / Tamb

The anti-freeze temperature (Ta) can be set with the **TEMP** key from OFF (boiler always off) to a temperature between 2.0 and 7.0°C, with a precision of a tenth of a degree, using the ▲ and ▼ arrows. The following window is displayed:

- Ta=x.x° / hour:min / Tamb

Keep the arrows pressed for long to increase or decrease the value rapidly and automatically. Go back to the OFF window by pressing the ◀ window. Press **OFF** again to go back to the previous operating mode.

RESET

Due to unforeseeable and unusual events, the device may need to be restarted (e.g. if blocked following a strong electromagnetic interference): in this case, press the round key on the right side of the device (see figure) using a paper clip or pin; the device restarts with the following: **"Fantini Cosmi / CH140GSM"** displayed for a few seconds and then goes into AUTO mode.

The previous configuration is retained as it is saved in the programmable thermostat: The date and time normally remain unchanged.

If you want to reset the factory settings, the system can be restored with the **RESET** command in **PROG/CONFIG**, which exits to the AUTO mode.

In this case, all the settings and customizations made by the user will be lost and replaced with the factory settings, except for the date and time.

5. REMOTE PROGRAMMING VIA SMS

Using the GSM function allows you to:

- Check the temperature of the house
- Set the temperature of the house
- Receive alerts that the ambient temperature threshold has been exceeded
- Receive an alert that the SIM validity has expired
- Receive an alert concerning a 230V power failure (BLACKOUT)
- Receive an alert when the 230V power supply returns (POWER ON)
- Change the time of the programmable thermostat
- Receive alerts about changes in the status of two alarm contacts (for example: a boiler alarm, a burglar alarm, a low temperature alarm, an indication of a malfunction in the boiler, an overflow sewage tank alarm, and so on)
- Switch an external utility off or on to 230Vac, 500W (such as the irrigation) via an internal relay

The CH140GSM allows a remote user to send an SMS to know what mode the system is in or to control the mode it is to be set in.

The antenna symbol flashes briefly throughout the management of the remote control as an indication of the relevant response being received and managed.

IMPORTANT NOTE:
it is useful to know that the free application "IntelliCLIMA" is available on the respective "APP STORE" for iOS and Android, which allows the CH140GSM programmable thermostat to be managed more easily.

N.B.: the "IntelliCLIMA" app does not allow the settings and displays concerning the SIM expiry alerts (EXP SIM), low temperature alarm (TLOW) and alerts for no 230V power or power supply return (BLACKOUT and POWER ON) to be managed. Until version V2.0 of the APPs will be available, these features are to be solely managed via SMS.

SMS COMMANDS

The following SMS messages are used to manage the CH140GSM:

- **#STATUS** allows you to know the status of the CH140GSM, the alarms and the relay.

When this message is sent the CH140GSM takes less than a minute to respond with an SMS as follows (an example of actual AUTO mode is given):

REPLY MESSAGE

TAMB=22.9	current ambient temperature reading*
T1=17.0	set temperature T1
T2=19.0	set temperature T2
T3=23.0	set temperature T3
TOFF=5.0	set anti-freeze temperature
TMAN=16.5	set manual temperature
TJOL=19.0	set Jolly temperature
HJOL=1	hours of duration of the Jolly program
DJOL=0	days of duration of the Jolly program
PROGRAM=AUTO	program set on the CH140GSM
REMOTE= ---	program set remotely (--- : none)
PLANT=OFF	relay status of the programmable thermostat
TLOW=5.0	temperature set via the alarm being sent
INPUT1=OFF	alarm 1 status
INPUT2=OFF	alarm 2 status
OUTPUT=OFF	relay status
TIME:18:30	time of the programmable thermostat
EXP SIM=0	SIM expiry month (0 : value not set).

This is a standard reply for each message sent.
* With an ambient temperature that is the same or lower than 0°C the CH140GSM will always respond with TAMB=00.0

Only the rows that are different from the message shown above are shown below:

- **#FROST** sets the anti-freeze program, that is, switches the system OFF
The reply message shows: **PROGRAM=OFF**
                                              REMOTE=OFF
CH140GSM shows OFF flashing (whereas it remains steady if SEL is set)

■ **#RESUME** command to switch from the status sent via the remote command to the status previously set on the CH140GSM.
The reply message shows: **PROGRAM=AUTO**
REMOTE= ---
The display of the CH140GSM goes back to the AUTO mode

■ **#MAN** command to set the MANUAL mode with the TMan set in the CH140GSM (present in the status message)
The reply message shows: **PROGRAM=MANUAL**
REMOTE=MANUAL
The CH140GSM is in the MAN mode (flashing to indicate the remote setting) and TMan=16.5 is displayed

■ **#ECONOMY** command to set the MANUAL mode with TMan the same as T1 (present in the status message)
The reply message shows: **PROGRAM=MANUAL**
REMOTE=ECONOMY
The CH140GSM is in the MAN mode (flashing to indicate the remote setting) and TMan=17.0 is displayed, which coincides with T1

■ **#COMFORT** command to set the MANUAL mode with TMan the same as T3 (present in the status message)
The reply message shows: **PROGRAM=MANUAL**
REMOTE=COMFORT
The CH140GSM is in the MAN mode (flashing to indicate the remote setting) and TMan=20.0 is displayed, which coincides with T3.

■ **#AUTO** command to set the AUTO mode (weekly program)
The reply message shows: **PROGRAM=AUTO**
REMOTE=AUTO
The CH140GSM is in the AUTO mode (flashing to indicate the remote setting).

■ **#HOL** command to set the HOLIDAY mode (daily program)
The reply message shows: **PROGRAM=HOLIDAY**
EMOTE=HOLIDAY
The CH140GSM is in the HOLIDAY mode (flashing to indicate the remote setting).

- **#JOL** command to set the Jolly mode
  The reply message shows: **PROGRAM=JOLLY**
  REMOTE=JOLLY
  The CH140GSM is in the Jolly mode (flashing to indicate the remote setting).

- **#T1=value**
  Sets the temperature value for T1
  The value is written as TU.d, that is TensUnits.decimal (e.g **#T1=19.2**)
  The Tens can be omitted (e.g. 9.0). The reply message shows the new value of T1

- **#T2=value**
  Sets the temperature value for T2
  The value is written as TU.d, that is TensUnits.decimal (e.g **#T2=20.4**)
  The Tens can be omitted (e.g. 9.0). The reply message shows the new value of T2

- **#T3=value**
  Sets the temperature value for T3
  The value is written as TU.d, that is TensUnits.decimal (e.g **#T3=24.3**)
  The Tens can be omitted (e.g. 9.0). The reply message shows the new value of T3.

- **#TMAN=value**
  Sets the temperature value for the MANUAL program
  The value is written as TU.d, that is TensUnits.decimal (e.g. **#TMAN=22.0**)
  The Tens can be omitted (e.g. 9.0). The reply message shows the new value of TMAN

- **#TJOL=value**
  Sets the temperature value for the JOLLY program
  The value is written as TU.d, that is TensUnits.decimal (e.g. **#TJOL=24.0**)
  The Tens can be omitted (e.g. 9.0). The reply message shows the new value of TJOL

■ **#HJOL=value**
Sets the hours value for the JOLLY program
The value is written as TU, that is TensUnits (e.g **#HJOL=12**)
If the Tens are equal to zero they can be omitted (e.g. 8).
The number of programmed JOLLY hours replaces the hours or days previously set manually or via SMS.
The reply message shows the new value of HJOL

■ **#DJOL=value**
Sets the days value for the JOLLY program
The value is written as TU, that is TensUnits (e.g **#DJOL=8**)
If the Tens are equal to zero they can be omitted.
The number of programmed JOLLY days replaces the hours or days previously set manually or via SMS.
The reply message shows the new value of DJOL.

■ **#TIME=HH:MM**
Updates the current time of the programmable thermostat
The values are written as TU, that is TensUnits (e.g **#TIME=12:23**)
If the Tens are equal to zero they can be omitted (e.g. **#TIME=12:5** for the time 12:05).

■ **#MEMO=MM**
Sets the expiry month of the SIM (EXP SIM), with a 0-12 interval, where 0=not set.
The values are written as TU, that is TensUnits (e.g **#MEMO=12** for the month of December)
If the Tens are equal to zero they can be omitted (e.g. **#MEMO=5** for the month of May).
The reply message shows the new value of EXP SIM.
Important note: regardless of the remaining credit on the SIM, the mobile operators require a top-up every 11 to 12 months from the date of activation or from the last top-up; otherwise, the SIM is considered expired and disabled.
It is recommended to set the expiry month of the SIM in the programmable thermostat and the telephone number TEL3 (the number where the alert is to be sent); in this case, at 12:00 hours of the first day of the set expiry month, the programmable thermostat will send an SMS to the telephone number TEL3 with

the message "EXP SIM" to remind the user to make a top-up and prevent the SIM from expiring.

Example: by setting #MEMO=5 and #TEL3=399123456*, at 12:00 hours of 1st May, the programmable thermostat sends an SMS to the number 399123456 with the message: "EXP SIM".

COMMANDS FOR ALARMS AND ALERTS

■ **#TEL1=XXXXXXXXXX*** sets the first telephone number to which the message concerning the alarms of inputs IN1 and IN2 will be sent. Replace "XXXXXXXXXX" with the telephone number that is to be saved. N.B. Max 25 characters. You must end the command with an "*" (asterisk).

■ **#TEL2=XXXXXXXXXX*** sets the second telephone number to which the message concerning the alarms of inputs IN1 and IN2 will be sent. Replace "XXXXXXXXXX" with the telephone number that is to be saved. N.B. Max 25 characters. You must end the command with an "*" (asterisk).

■ **#TEL3=XXXXXXXXXX*** sets the third telephone number to which only the temperature alarm (TLOW), SIM expiry and no 230V power or power supply return messages will be sent.
Replace "XXXXXXXXXX" with the telephone number that is to be saved.
N.B.: Max 25 characters. You must end the command with an "*" (asterisk).

Important note: it is recommended to set your own telephone number in TEL3, to which the alert messages sent spontaneously by the programmable thermostat (temperature alarm alert, programmable thermostat SIM expiry alert, no 230V power or power supply return alerts).

■ **#TEL1=*** cancels the previously saved telephone number 1
■ **#TEL2=*** cancels the previously saved telephone number 2
■ **#TEL3=*** cancels the previously saved telephone number 3
■ **#TEL=?** used to know the saved telephone numbers

■ **#AL1=0,TEL1,TEL2** sets the sending status of alarm1 and to which numbers to send it. In this case, an alarm will be sent to TEL1 and TEL2 when the contacts are closed.

The sending status is selected based on the following: **0**=send alarm when the contacts are closed **1**=send alarm when the contacts are opened **2**=send alarm

when the contacts are closed and opened and combining the text ",TEL1,TEL2" the alarm will be sent to the two saved numbers. (N.B. always enter the text ",TEL1,TEL2" even if only one telephone number has been set.)

■ **#AL2=0,TEL1,TEL2** sets the sending status of alarm2 and to which numbers to send it. Select the sending status and the numbers to which the alarm is to be sent in the same way as the previous command.

■ **#AL3=0** sets the sending status for the low temperature alarm (TLOW), which in any case will be sent to TEL3. The sending status is selected based on the following: 0=no TLOW alarm is sent, 1=TLOW alarm is sent (if the ambient temperature drops below the set value). N.B.: the "EXP SIM" (SIM expiry) message will in any case be sent to TEL3.

■ **#AL=?** It is used to know the activation status of the alarms and the associated telephone numbers

■ **#MSGIN1=INPUT1,ON,OFF** allows you to customise the messages concerning alarm1; simply replace "INPUT1" with the description of the alarm (e.g. INPUT PORT, however, no longer than 20 characters) and ",ON,OFF" with the two conditions (e.g. ",OPEN,CLOSED", however, no longer than 10 characters each).

■ **#MSGIN2=INPUT2,ON,OFF** allows you to customise the messages concerning alarm2; simply replace "INPUT2" with the description of the alarm (e.g. SHUTTER, however, no longer than 20 characters) and ",ON,OFF" with the two conditions (e.g. ",HIGH, LOW", however, no longer than 10 characters each).

■ **#TLOW=value** Sets the temperature value for the low temperature alarm to be sent.
The value is written as TU.d, that is TensUnits.decimal (e.g #TLOW=11.0)
The Tens can be omitted (e.g. 9.0).
The reply message shows the new value of TLOW.
The alarm temperature (T LOW) can range between 2° and 40°C; when the programmable thermostat detects that the ambient temperature drops below the set TLOW value, it will send an SMS alert message to the set telephone number TEL3.
N.B.: to enable this feature, besides setting the telephone number TEL3, you must enable the function with the message #AL3=1.

Example of a temperature alarm alert:
ALERT TLOW: TEMP=11.5 TLOW=12.0
In this case, the set threshold value is 12.0°C and the temperature detected by
the programmable thermostat upon sending time was 11.5°C.

COMMANDS FOR THE AUXILIARY RELAY (RELAY 2)

- **#ON** switches the Relay 2 on (that is, closes contacts 5 and 6 and opens 5 and 7)
- **#OFF** switches the Relay 2 off (that is, opens contacts 5 and 6 and closes 5 and 7)

NO 230V POWER OR POWER SUPPLY RETURN ALERT MESSAGES

Thanks to a charge reserve that allows the programmable thermostat to function
for a few seconds in case of a blackout, it can manage the no power alert by sending
a message to the number set in TEL3. Once the power supply returns, after about
ten minutes, the programmable thermostat will send a message to the number set
in TEL3 indicating the power supply return.

The syntax of the messages is:

- **BLACKOUT**   indicates the 230V power cut
- **POWER ON**   indicates the 230V power supply return

IMPORTANT NOTE: it is recommended to set your own telephone number in TEL 3
for the programmable thermostat to spontaneously send alert messages, such as
TIM expiry and temperature alarm alerts, besides the no power and power supply
return alerts.

6. TECHNICAL SPECIFICATIONS

Temperature adjustment range	2-40 °C, 0.1°C increment
Ambient T reading/display range	-35 +60 °C
Power supply	230V 50Hz
Maximum power consumption	10 W
Connection to boiler	3 screw clamps (closed + open)
Contact rating	5(3)A / 250 Vac
Type of action	1.B.U (micro disconnection)
Software	class A
Minimum adjustment differential	0.1°C
Reference thermal gradient	4K/h
Maximum ambient temperature	T45
Electrical insulation	▢ double insulation
Degree of protection	IP20
Pollution degree	2
Pulse voltage	4000V
Assembly	to the wall
Dimensions	137 x90 x 32 mm
Quad band	EGSM850/900/1800/1900 MHz
Output power	- Class 4 (2W) for 850/900 MHz - Class 1 (1W) for 1800/1900 MHz
Sensitiveness	- 107dBm@850/900MHz - 106dBm@1800/1900MHz
Connections	Power connector 2.5 mm² (AWG14) Input/Output Connector 2.5 mm² (AWG14)
Conforms to standards	EN 60730-1 and second parts, Directive R&TTE EN 301 489-1, EN 301 489-7, EN 301 511
ErP classification	ErP Class IV; 2% (Reg. EU 811/2013 - 813/2013)
Product not manufactured in Italy	

DISPOSAL OF PRODUCTS

The crossed-out dustbin symbol with wheels indicates that the 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 13 August 2005.

By participating in the separate collection of products and batteries, you help with the proper disposal of these materials and therefore help prevent potential adverse consequences for the environment and human health. For more detailed information on the collection and recycling programs available in your town, call your local facility or the shop where you purchased the product.

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