CALEFFI
Hydronic Solutions

INSTRUCTION MANUAL
SATKF2000

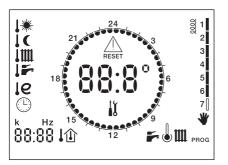# SATK'S SERIES HIUs REMOTE CONTROL DEVICE

Other languages   (I) (FR) (NL)

Technical features

Supply	by communication bus
Number of temperature levels	2 (DAY / NIGHT)
Temperature setting range DAY	5÷30°C
Temperature setting range NIGHT	5÷30°C
Temperature setting range MANUAL	5÷30°C
Differential operation temperature OFF	0.0÷1.0°C
Differential operation temperature ON	-1.0÷-0.1°C
Correct working range room temperature probe	-40÷50°C
Temperature resolution	0.1°C
Room anti-frost start temperature range	0.1÷10.0°C
Room anti-frost end temperature	start value + 0.6°C
Timer programmer resolution	30 minutes
Maximum number of startings and shutdowns per day	48
Number of standard heating programs	1
Number of standard pre-heating programs	1
Internal clock time retention in case of power loss	1 hour
Operating temperature range	0÷50°C
Stocking ambient temperature	-10÷50°C
Size (L×H×D)	120×90×30 mm
Maximum cable lenght fot H.I.U. connection	30 m
Cable section for H.I.U. connection	0,5÷1,5 mm^2

Keys

Key	Function
⏻ ▥ ☞	Select operating mode
SET	Set time and temperature
PROG	Weekly program
🎛	Change displayed value (turn). Select automatic / manual (press). Confirm (press).
RESET	Alarm reset
☀☾	Select temperature level (day/night)
⌡	Temperature display

LCD symbols

ICON	STEADY	BLINKING	ICON	STEADY	BLINKING
88:8°	Current temperature/ water temperature	Fault code	‱	Aux. contact closed	
88:88	Time/temperature		↓☀		Set day temperature
1|	Current day of the week	Change day of the week	↓☾		Set night temperature
🚿	DHW enabled	DHW requested	↓▥	Heating temperatur	Set heating temperature
▥	Heating enabled	Heating requested	↓🚿	DHW temperature	Set DHW temperature
🌡	DHW preheating enabled	DHW preheating active	↓e	Return temperature	
e	RTL active (eco mode)		↓e+▥🚿		Set heating / DHW max. return temperature
✋	Manual mode		☀	Current temperature level = day	
PROG	Heating program	Change heating program	☾	Current temperature level = night	
PROG+🌡	DHW preheating program	Change DHW preheating program	⚠ RESET	Fault - manual restore required	
⇧	Current room set point		⚠	Fault requiring technical service	Antilegionella cycle in progress
↓⌂	Outside temperature / weather comp. active		24	Day level	
⌂	Return comp. active		24	Night level	
🕐		Set time and day of the week	⚒	Service required	

Contents

1 - How to use this instruction booklet

This booklet is divided into two sections, each of which having its own addressee:

- **Installer section**, this gives instructions regarding the accurate installation and configuration of the remote control device.
- **User section**, this gives detailed instructions regarding the steps to carry out in order to personalize the functioning of the **SATK'S** remote control device.

Some hints

- When a numeric value is blinking you can change it by turning button 🔘

- The value as changed by turning button 🔘 will be automatically stored when the blinking stops.

> The use of the symbol shows the impossibility to dispose this product as domestic waste.
>
> The correct disposal of this product helps to prevent potential negative consequences for the environment and human health.

2 - General instructions

- Carefully read this manual because it will give you important instructions regarding the safety of use, installation and maintenance.
- The system must be implemented incompliance with the safety regulations in force.
- After unpacking and before installing check that the product is intact.
- This device is to be used only for the use it has been designed for any different use is improper.
- In case of repair, contact only technical service centers authorized by the manufacturer.
- Non-compliance with the above may endanger the safety of the device.

- The manufacturer cannot be held liable for any damages resulting from bad operation, extraordinary events, configuration errors or improper, wrong and unreasonable use of the device.
- The manufacturer reserves the right to eventually make changes to the device and whatever else appears necessary for the continual improvement thereof.
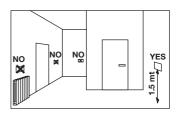
3 - Main features

The **SATK'S** remote control device is electrically connected to the heat interface unit by means of two non polarized conductors. They give it the necessary supply to operate and constitute also the communication between the two devices. After installing it is immediately ready to run with its memorized standard program. This program can be changed according to the needs of the user.

The programming of the **SATK'S** remote control device is extremely easy - a large LCD-display makes it possible to check and change the set values at any time.
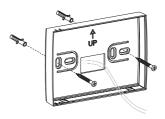
The **SATK'S** remote control device must be installed only by expert personnel. To correctly install the device and in compliance with the regulations in force about electrical appliances, use a dedicated cable raceway to connect it. In case this is impossible, any interference due to electric wires may cause poor working of the remote control device.
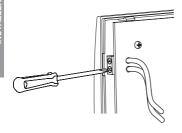
When used as a room thermostat, install the **SATK'S** remote control device at approx. 1.5 m over floor in a place suitable for correct sensing of the room temperature. Do not install behind doors, curtains, near heat sources nor expose to direct sunlight or water sprinkles.

1. Cut off electricity from heat interface unit.

2. Use a screwdriver and gently press on the two lower splines to take off the device from the back of its fixing template.

3. Insert both ends of the connecting wire into their proper seat on the fixing template. Use the proper holes to install the **SATK'S** remote control device directly onto the wall or onto a housing. The necessary screws are supplied together with the device. Pay attention to the sign ↑ "UP".

4. Connect the cable to the terminal box.

5. Fix your remote control device to its template. First insert the upper partand then press and turn until its completely closed.

N.B.: *The connection is not polarized.*

6. Supply power to the heat interface unit.

Now the installation is completed. If it was done correctly the remote control device is now powered and the LCD display will show the following message for a few seconds:

As soon as the connection is established the normal operating condition will be displayed:

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Con
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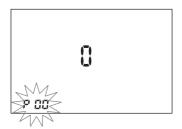
```
OFF

15:27
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5 - Configurating operating parameters

This operation must be done by technical service personnel only. Errors in the configuation of your SATK'S remote control device may lead to malfunctioning.

This operation configures the remote control device to be compatible with its installation position.
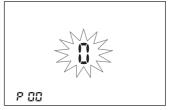
1. Move the remote control device to **OFF** position by repeatedly pressing button ⏻♨
2. Press the keys ⌐PROG⌐ and ⌐RESET⌐ and keep them pressed until the display will show **PAr**.
3. To confirm the function press button 🌼

Instead of the time the display will show the parameter number, and instead of the temperature the parameter value. The parameter number will be blinking.

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4. Turn button 🔄 to select the parameter number to be displayed. The display will show the corresponding parameter value.

5. Press button 🔄: to change this value. The corresponding parameter value will start blinking.

6. Turn button 🔄 to change the displayed value.

7. If within 30 sec. no key is pressed, normal operation will be restored and the last change made will not be saved.

8. Press button 🔄 to store the value.

9. To change the parameter repeat from point 4.
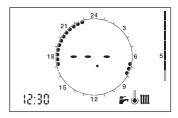
10. To exit the configuration context press key ⎣RESET⎦

Hereafter you can find the definition of parameters you can change:

• **P00 - Remote control device configuration**
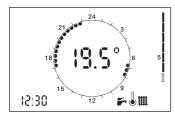it enables / disables clock and thermostat functions of the device

P00 = 0 – The thermostat function is disabled. The device can be used to set the space heating time program for the heat interface unit. When one or more external thermostats are connected to the heat interface unit, the remote control device, if set in AUTOMATIC mode (see 8.2) defines the hours of the day where a request for provision of space heating is accepted. If set in MANUAL mode (see 8.1) space heating is possible all day, according to the signals from external thermostats.

The digits in the central part of the display will show DHW/heating flow temperature, when the heat interface unit is in operation. When in stand-by --.- is shown on the display.

P00 = 1 – The thermostat function of the remote control device is enabled. It acts as a normal room chrono-thermostat. The space heating program on the device has no impacts on the provision of space heating to the heating zones controlled by other room thermostats (if any).

The digits in the central part of the display will show the current ambient temperature

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- **P01 - Room temperature sensor compensation**
  It is the value (-5.0°C ÷ +5.0°C) to be added to/detracted from the displayed room temperature in order to compensate any possible error.

- **P02 - Room anti-frost start temperature**
  It defines the start temperature for the room anti frost function (0.1°C ÷ 10°C). N.B.: 0.0 = value 0.0 disables the room anti frost function.

- **P03 - Differential operation temperature OFF**
  It is the value to be added to the room setpoint in order to define the end of the space heating demand.
  Example:
  $T_{set point} = 20.0°C$
  $P03 = 0.5°C$
  $T_{set point} + P03 = 20.0 + 0.5 = 20.5°C$
  The central heating demand ends whenever the room temperature is higher then 20.5°C.

- **P04 - Differential operation temperature ON**
  It is the value to be subtracted from the room setpoint in order to define the start of the space heating demand.
  Example:
  $T_{set point} = 20.0°C$
  $P04 = 0.5°C$
  $T_{set point} - P04 = 20.0 - 0.5 = 19.5°C$
  The central heating demand starts whenever the room temperature is lower then 19.5°C.

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6 - Selecting operating mode

Select the operating mode by pressing key several times.

The operating modes you can set are:

SELECTED STATUS	ID ICONS
OFF	OF F
SUMMER	
WINTER	
HEATING ONLY	

1. OFF: all requests are disabled.

2. SUMMER: the heat interface unit is enabled to produce domestic hot water only.

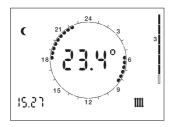**3. WINTER:** the heat interface unit is enabled to produce both domestic hot water and space heathing.

4. HEATING ONLY: the only operating mode enabled is space heating.

No matter which function has been selected, the room anti-freze function is always operative (cfr. respective section).

7 - Setting up clock and temperature

To set the clock and the temperature set points of this remote control device and of the boiler press key $\boxed{\text{SET}}$ several times.

The menu is as follows:

SELECTED STATUS	ID ICONS
CLOCK	🕑
TEMPERATURE DAY	↓❋
TEMPERTURE NIGHT	↓☾
HEATING FLOW TEMPERATURE	↓▥

SELECTED STATUS	ID ICONS
DOMESTIC HOT WATER TEMPERATURE	↓☞
COMFORT MODE	🌡
HEATING MAX RETURN *	↓e + ↓▥
DHW MAX RETURN *	↓e + ↓☞
KD OUTSIDE PROBE *	k

* These parameters may not be accessible

In place of the time, the quantity value is displayed in the lower left corner. Its identifying icon will be blinking. In order to conclude the setting phase press key $\boxed{\text{SET}}$ several times until all identifying icons are off.

7.1 - Setting up clock

1. Press key SET : the hour will blink.

2. Turn button to set the required value.

3. Press button to confirm the input value. The hour will stop blinking and the minutes will start blinking.

4. Turn button 🌼 to set the value.

5. Press button 🌼 to confirm value. The minutes stop blinking and the day of the week will start blinking.

6. Turn button 🌼 to set the value.

7. Press button 🌼 to confirm value. The day of the week stops blinking and icon 🕑 goes off.

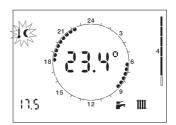### 7.2 - Setting up room DAY temperature (if thermostat enabled)

1. Press key [SET] until icon ↓☀ starts blinking.
2. Turn button ⚙ to set the value you want.

7.3 - Setting up room NIGHT temperature (if thermostat enabled)

1. Press key [SET] until icon ↓(starts blinking.

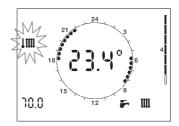2. Turn button ⊕ to set the temperature you want.

7.4 - Setting up HEATING flow temperature

If the remote control device has been configured as modulating, this parameter determines the max. temperature value as computed by the modulation algorithms.

1. Press key [SET] until icon ⌡⊞ starts blinking.
2. Turn button 🎡 to set the value you want.

7.5 - Setting up DOMESTIC HOT WATER temperature

1. Press key ⌈ SET ⌉ until icon 🚿
   starts blinking.
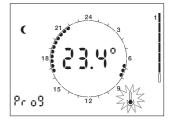
2. Turn button 🎛 to set the value
   you want.

7.6 - Enabling / disabling DOMESTIC HOT WATER pre-heating

1. Press key $\boxed{\text{SET}}$ until icon 🌡
   starts blinking.
2. Turn button 🎛 to enable (ON),
   disable (OFF) or enable according
   to the weekly domestic hot water
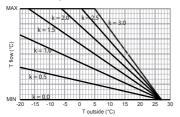   pre-heating program (PROG) the
   function.

7.7 - Setting up outside probe K value

This setting option is available only if the outside probe is connected and the use for modulation is enabled.

This parameter allows to select the steepness of the modulation curve for weather compensation.

MIN can be either 25°C or 45°C according to the setting of the heat interface unit. MAX is the set heating flow temperature.

1. Press key [SET] until icon **k** starts blinking.

2. Turn button ⚙ to set the value you want.

7.8 - Return temperature limits (if the relative function is enabled)

The set points identified by icons ↳ℓ + 🔥 and ↳ℓ + ↦ should not be changed.
These values should be set by technical personnel only

USER

If the operation mode selected is WINTER or HEATING ONLY, the device allows you to manipulate the room temperature either MANUALLY or AUTOMATICALLY.

If the thermostat function is enabled (**P00 = 1**):

- In MANUAL mode the user selects the room temperature he wants, and this temperature will be maintained until a change is made.
- In AUTOMATIC mode the room temperature set point is determined by the correspondence between time-day and the set weekly program.
- In AUTOMATIC (holiday) mode the room temperature set point is determined by the correspondence between time-day and the set holiday program.
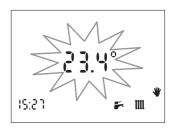
If the thermostat function is disabled (**P00 = 0**):

- In MANUAL mode the heating function depends solely on the signals from external thermostats connected to the heat interface unit.
- In AUTOM. / AUTOM. (holiday) mode the remote control device acts as a clock, setting a time program for the heating function for all thermostats connected to the heat interface unit.

USER

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8.1 - MANUAL operation

1. Press key 🌼 until icon ♋ appears. The central digits on the display will show the set temperature blinking.
2. Turn button 🌼 to set the temperature you want.
3. After 30 secs the central display will go back to showing the current ambient temperature.
4. The set temperature can be changed again at any moment by turning button 🌼.
5. The set temperature can be displayed by pressing key [↓].

If the thermostat function is disabled, pressing key 🌼 until icon ♋ appears results in disabling the time programming of space heating set on the device.

8.2 - AUTOMATIC operation
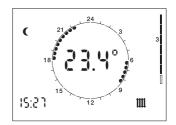
1. Press button ⬡ until the heating clock corona will be displayed.

2. Icon ☀ or ☾ will light up to show which is the current set temperature level.

If the thermostat function is disabled, pressing button ⬡ until the heating clock corona will be displayed enables the time programming of space heating set on the device (for any external thermostat connected to the heat interface unit).
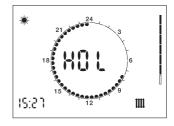
8.3 - AUTOMATIC (holiday) operation

The space heating program will be according to the set pattern of the holiday day, no matter what the day of the week is.

1. Press button 🔘 until "HOL" will be shown in the central display

2. Icon ☀ or ☾ will light up to show which is the currently set temperature level.

If the thermostat function is disabled, pressing button 🔘 until the heating clock corona will be displayed enables the holiday time programming of space heating set on the device (for any external thermostat connected to the heat interface unit).

When operation mode WINTER or HEATING ONLY is selected, the remote control device allows operation in AUTOMATIC mode in which a priorly set program manages the room temperature during the various times of the day.

The room temperature can be set to two independent levels: DAY (☀) and NIGHT (☾); the weekly heating program distributes these levels over the day. Inside the remote control device there is a standard program to control the room temperature that can be changed by the user.

The display / change mode of the heating program will be actuated by pressing key ⌐PROG⌐ ; the lighting of icon PROG shows that it is on.

FUNCTION	ID ICON
DISPLAY HEATING PROGRAM	PROG steady
CHANGE HEATING PROGRAM	PROG blinking

After making the changes press key ⌐PROG⌐again to exit the programming area.

USER

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9.1 - Display heating program

1. Press key PROG. Icons PROG and 1 will appear on the display and show the first day of the week. Icons ☀ / ☾ and the jumper are ON or OFF matching the DAY / NIGHT level of the displayed time.

2. Turn button in order to scroll the times of the day and to move from one day to another.

9.2 - Change heating program

1. Press key PROG. Icons PROG and 1 will appear on the display and show the first day of the week. Icons ☀ / ☾ and the jumper are ON ⠿ or OFF ⌐24⌐ matching the DAY/NIGHT level of the displayed time.
2. Press button ⚙ to go to the program change zone: icon PROG and the day of the week will blink.
3. Turn button ⚙ to select the day.
4. Press button ⚙ to confirm the day you selected and to move to the time. The day of the week will stop blinking and the time will start blinking.
5. Turn button ⚙ to select the time.
6. Press key ☀☾ to change the temperature level DAY / NIGHT assigned to the current time.

7. Turn button ⚙ until the time period you want the current level to be kept
8. Press key ☀☾ to change the level and so on.
9. Repeat operations from point 2 on in order to change the day.

The eighth day (indicated by all numbers from 1 to 7 displayed) is used to set the " HOLIDAY" day program

10 - Weekly domestic hot water pre-heating program

The SATK'S remote control device can run (same as for heating program) a weekly program to enable (☀) or disable (☾) the pre-heating function by time ranges.

Inside the remote control device there is a standard program to control the DHW pre-heating function the user can display and change it.
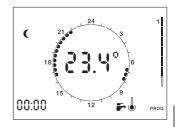The pre-heating program display / change mode is the same as the one used for the heating program:
the lighting up of icons PROG and 🚰☀ shows that it is on.

10.1 - Display pre-heating program

1. Press key 🄿🅁🄾🄶. Icons PROG and **1** will appear on the display and show the first day of the week.

2. Press key ⎀ . Icon 🚰🌡 will light upon the display and show the pre-heating program.
   Icon ☀ (pre-heating enabled) or ☾ (pre-heating tank disabled) and the jumper are ON ⌣24⌣ or OFF ⌣24⌣ matching the level of the displayed time.

3. Turn button 🎛 to scroll the times of the day and to move from one day to another.

10.2 - Change pre-heating program

1. Press key [PROG]. Icons PROG and 1 will appear on the display and show the first day of the week.
2. Press key ▷ . Icon will light up on the display and show the pre-heating program. Icons ☀ (pre-heating enabled) (or (pre-heating disabled) and the jumper are ON $\underset{\bullet\bullet\bullet}{24}$ or OFF $\underset{}{24}$ accordingly.
3. Press button 🔘 to move to the program change zone: icon PROG and the day of the week will blink.
4. Turn button 🔘 to select the day you want.
5. Press button 🔘 to confirm the day you selected and to move to the time. The day of the week will stop blinking and the time will start blinking.

6. Turn button 🔘 to select the time you want.
7. Press key ☀(to change status ENABLED (☀) / DISABLED (( ) assigned to current time.
8. Turn button 🔘 until the time period you want the current level to be kept.
9. Press key ☾(to change level and so on.
10. Repeat operations from point 3 on to change the day.

The remote control device will display any faults with code **E...** blinking in place of the temperature display.
To learn about the type of fault refer to the heat interface unit instruction booklet.
There can be two kinds of faults: those which can be restored by the user and those which cannot be restored.

11.1 - Restorable faults

You recognize these faults because icon ⚠ will light up and blink together with icon RESET; they can be reset by pressing key ⌊RESET⌋.
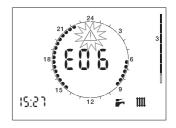
11.2 - Not restorable faults

These faults are identified by the icon ⚠ ;
these faults cannot be reset by the user but require technical service.

Pressing key ⬇ repeatedly your **SATK'S** control device is able to display the following quantity values:

The value is displayed in the lower left corner, in place of the time, and is identified by its icon.

SELECTED QUANTITY	ID ICON
SET ROOM TEMPERATURE	⚠
DOMESTIC HOT WATER TEMPERATURE	⬇🚰
HEATING FLOW TEMPERATURE	⬇▥
OUTSIDE TEMPERATURE	⬇⌂
RETURN TEMPERATURE	⬇e

12.1 - Display set room temperature (if thermostat is enabled)

This is the temperature set for the activated temperature level (DAY - NIGHT - MANUAL).

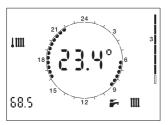### 12.2 - Display temperature from domestic hot water probe

This is the temperature read by the domestic hot water probe fitted in the heat interface unit

12.3 - Display temperature from heating flow probe

This is the temperature read by the heating flow probe fitted in the heat interface unit.

12.4 - Display temperature from outside probe

This is the temperature read by the outside probe connected to the heat interface unit.

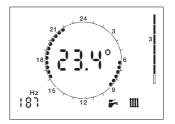### 12.5 - Display temperature from return probe

This shows the primary return temperature.

12.6 - Display flow meter rotation frequency

This is the rotation speed of the turbine of the flow meter.

USER

If necessary the original values of the remote control device as set by the manufacturer can be restored.

The restored values are as follows:
• Temperature DAY: 20°C
• Temperature NIGHT: 16°C
• Temperature MANUAL: 20°C

Weekly heating program

Days	NIGHT	DAY
Monday - Friday	00.00 ÷ 06.00 08.00 ÷ 16.30 22.00 ÷ 00.00	06.00 ÷ 08.00 16.30 ÷ 22.00
Saturday - Sunday	00.00 ÷ 07.00 23.00 ÷ 00.00	07.00 ÷ 23.00

Weekly DHW pre-heating program

Days	DISABLED	ENABLED
Monday - Friday	00.00 ÷ 06.00 08.00 ÷ 17.00 22.00 ÷ 00.00	06.00 ÷ 08.00 17.00 ÷ 22.00
Saturday - Sunday	00.00 ÷ 07.30 22.00 ÷ 00.00	07.30 ÷ 22.00

USER

1. Move the remote control device to OFF position.
2. Press keys 🌙 and RESET and keep them pressed for longer than 5 secs.
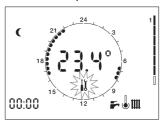3. The operation is confirmed when **dEF** appears on the display.

```
       dE F



 15:27
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14 - Other icons

Some other icons may appear in case specific functions have been enabled.

Auxiliary contact closed:

Maintenance required:

This function has no effect on the provision of the heating services of the heat interface unit. The lighting up of icons can therefore be ignored.

if the heat interface unit has been configured for scheduled maintenance, icon 🔧 indicates that the device needs to be serviced

The **SATK'S** controller is able to support the room-antifrost function.

In all the operating modes the central heating demand is generated whenever the measured room temperature is lower then the activation threshold (parameter P02). This grants protection of the heating installation from the freezing risk. The function can be eventually disabled trough proper setting of parameter P02 (P02 = 0.0).

In case the antilegionella function is enabled, from 3:00 a.m. to 3:30 a.m. the domestic hot water temperature set point is increased to provide thermal disinfection of the heat exchanger. During this cycle icon ⚠ blinks.