

K470H, K471



Energy
Management

K470H chronothermostat for radiators K471 programming key

Datasheet
0660EN 08/2024



Cronotermostato per radiatore K470H, tecnologicamente avanzato, silenzioso e compatto con dimensioni non più grandi di una normale testa termostatica.

Easy navigation in the menu using the multifunction buttons, the wheel selector and an LCD display, to program the chronothermostat and choose the operating modes.

Il cronotermostato è dotato di ghiera con attacco M30 x 1,5 mm e adattatore per utilizzo con un'ampia gamma di valvole termostattizzabili.

➤ Versions and product codes

PRODUCT CODE	CONNECTIONS
K470HX001	M30 x 1,5 mm threaded ring nut + R453HY013 adaptor for other radiator valves
K471X001	Mini-USB connection for K470H chronothermostat

Technical data

K470H chronothermostat

- No. of programmable time bands: 4 daily time bands
- Regulation type: PID with answer time lower than 3 minutes
- Power supply: 2 batteries 1,5 V, AA type
- Protection degree: IP30
- Working temperature: 0÷50 °C
- Storage temperature: -20÷70 °C
- Type of casing: white ABS
- Valve connection: M30x1,5 mm (with R453HY013 adaptor for other Giacomini valve bodies)
- Serial port to K471 programming key: proprietary interface and protocol

⚠ WARNING. Use alkaline batteries only.
Do not use any type of rechargeable battery.

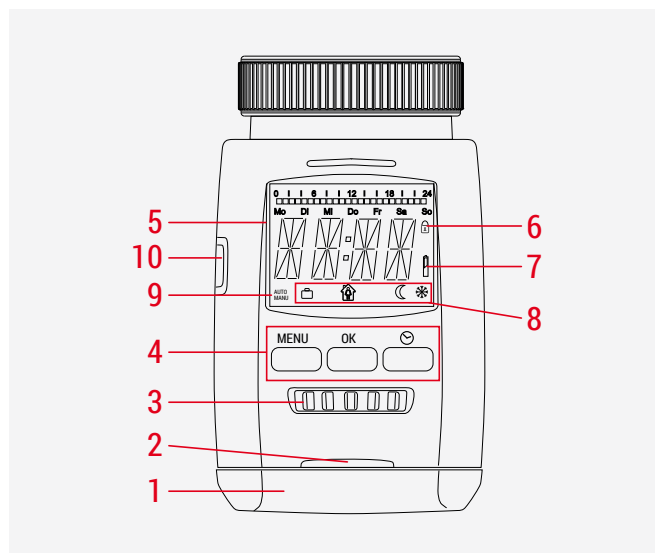
K471 programming key

- Power supply: 5 Vcc max. 100 mA via USB-port
- Serial port to PC: USB 2.0
- Serial port to K470H: proprietary interface and protocol
- System requisites: Windows XP® SP3 or higher
- Local signalling: 2 LEDs
- Protection degree: IP30
- Working temperature: 0÷50 °C
- Storage temperature: -20÷70 °C
- Casing: plastic

⚠ WARNING. The K470H chronothermostat's Mini-USB connector is only compatible with the cable of the K471 programming key; do not connect any other devices fitted with a Mini-USB connection, as this could irreversibly damage the chronothermostat.

The programming key K471 cannot be used as a portable mass memory.

Components



- | | |
|----|--|
| 1 | Battery compartment |
| 2 | Temperature sensor |
| 3 | Wheel selector |
| 4 | Multifunction buttons: - - |
| 5 | LCD display |
| 6 | Child protection function |
| 7 | Low battery |
| 8 | Active functions |
| 9 | AUTO (automatic) or MANU (manual) mode |
| 10 | Mini-USB connector for K471 programming key connection |

Operation

Manual mode (MANU)

In manual mode, the chronothermostat adjust the temperature set through the wheel selector.

Automatic mode (AUTO)

In automatic mode, the chronothermostat adjusts the temperature on the basis of the "comfort" or "economy" functions defined in the relative time bands of the programmed ambient profile.

The comfort and economy times can be defined via programmed timing. Up to 8 daily switchovers can be selected (4 "comfort" and 4 "economy").

The chronothermostat has the following factory settings:

- heating at "comfort" temperature, with the first switchover at 7:00 am
- reduction to "economy" temperature, with the first switchover at 10:00 pm

In this way, one daily heating time band is set (from 7:00 am to 10:00 pm) for the whole week.

TIMER function

With this function a certain temperature can be set for a predetermined time interval. Press the  button.

First the time in which the program is activated is shown.

Confirm with  button.

Now, the desired temperature can be set. Confirm with .

During the selected time period is not possible to change the temperature manually.

With the  button the function is disabled.

OFFSET setting

Elements like shelves and curtains near a radiator can impede good heat diffusion, inevitably affecting the room temperature detected by the chronothermostat and its subsequent adjustment.

In these cases, if the room temperature is very different from the temperature set on the chronothermostat, you can insert a correction factor, called OFFSET.

 **NOTA.** Before implementing an OFFSET value, it is necessary to measure the room temperature with the aid of a precision thermometer.

Example: if the "comfort" temperature set on the chronothermostat is 21 °C but the real temperature in the room is only 19 °C, enter a correction factor of +2 °C.

Automatic protection functions

Regardless of the programming and operating modes, the chronothermostat has two automatic protection functions:

- **Anti-freeze function:** if the room temperature falls below 6 °C, the chronothermostat opens the valve until the temperature rises to 8 °C. This prevents the water in the pipes from freezing.
- **Anti-calcification function:** once a week, on Friday morning, the chronothermostat performs a valve opening/closing cycle to prevent the valve from calcifying.

Setting the comfort/economy times

Up to 4 daily "comfort" switchovers (heating active) and 4 "economy" switchovers (temperature reduction) can be defined for each of the 7 days of the week, or for 3 groups of several days.

In the menu, the indications DAY1÷DAY7 refer to the days of the week (from DAY1 Monday to DAY7 Sunday).

The days are also shown in abbreviated form (Mo, Tu, We, Th, Fr, Sa, Su) beneath the hourly timings bar.

The indications D1-5, D1-6 and D1-7 refer to groups of several days, allowing you to quickly program a number of days at the same time:

- D1-5 = group of days from Monday to Friday
- D1-6 = group of days from Monday to Saturday
- D1-7 = group of days from Monday to Sunday

 **NOTA.** Any days that are not programmed remain set with the factory values. The "comfort" and "economy" temperatures are factory-set at 21 °C and 16 °C respectively.

OPEN WINDOW function

When the window is opened and the temperature therefore drops suddenly, the chronothermostat temporarily closes the valve (for a preset time) to save energy.

During this time, the anti-freeze symbol  will be shown on the display.

At the end of the timed period, the chronothermostat returns to normal operating mode.

TRAVEL function

In the event of a prolonged absence, you can set the temperature for that period (or even the closure of the valve), along with the date and time of your return.

CHILDREN LOCK function

This function allows to deactivate the multifunction buttons and wheel selector to prevent unauthorised persons from accessing the menu.

Heating shut-off (valve closure)

If necessary, you can close the valve to deactivate the heating in a room. The valve closes and thereby deactivates the heating function, but the anti-calcification function still remains active.

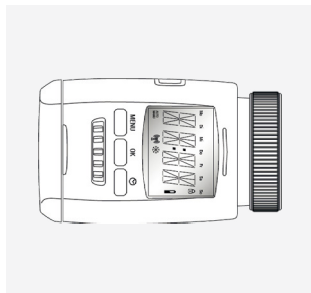
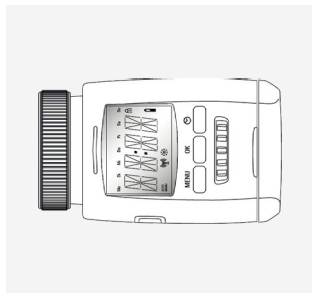
By resetting AUTO mode at any time, the chronothermostat will start up again and implement the programmed profile.

Restoring the factory configurations

This function allows you to delete all the programming operations made and thereby restore the chronothermostat to the conditions of the initial factory programming.

➤ Installation and removal of the chronothermostat

Allowed installation positions



⚠ This position is not recommended due to the influence of the radiator temperature on the chronothermostat.

Preparation for installation

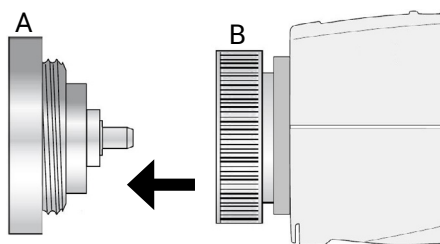
On the display PREP will be shown.

Now, the motor will move to the installation position in order to make the installation easier.

As soon as K470H chronothermostat is ready for installation, INST will be shown on the display.

Installation on Giacomini valves with thermostatic option, with connection M30 x 1,5 mm (H series)

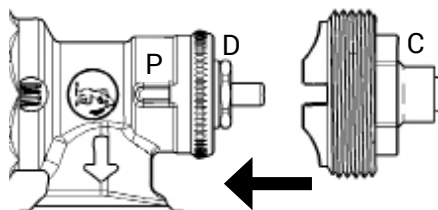
Tighten the ring nut (B) of the chronothermostat on the radiator valve (A).



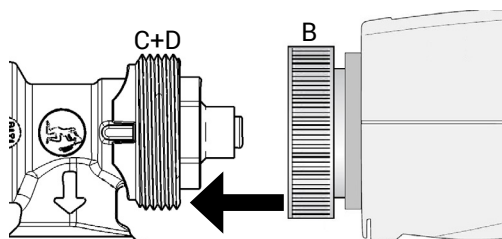
Installation on other Giacomini valves with thermostatic option

When installing on other Giacomini valve bodies with thermostatic option, use the contents of the sachet R453HY013 (included in the chronothermostat package).

Fit the threaded ring nut (C), coupling it with the reference pins (P) on the radiator valve (D).



Tighten the ring nut (B) of the chronothermostat on the radiator valve (C+D).



⚠ **NOTE.** The chronothermostat must be in INST or ON mode in order to fix it to the ring nut without too much effort.

If the chronothermostat is installed at a later time, select the INST menu before fixing it to the ring nut.

Adaptation on the valve

Initial installation: press the **MENU** button until and rotate the wheel selector until ADAP appears on the display.

Press **OK** button. The chronothermostat will adapt to the stroke of the valve.

This can take a few minutes.

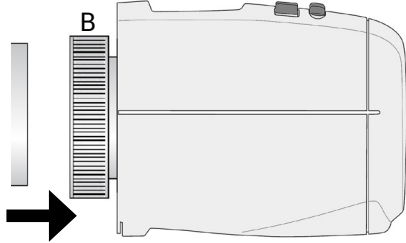
Once the adaptation is finished, the chronothermostat returns to normal mode.

If another adaptation is required, for example if the valve did not close completely during the first adaptation, select ADAP after pressing the MENU button and restart the operation.

Removing the chronothermostat

To remove the chronothermostat:

- Set the maximum temperature with the wheel selector (the display will show ON) and wait at least one minute.
- Unscrew the ring nut (B) of the chronothermostat from the radiator valve.



► Programming via K471 key

The K470H chronothermostat can be directly programmed via the K471 programming key, ensuring quick and easy chronothermostat configuration thanks to the exchange of data via the Mini-USB connector.

Using the key K471 and viewing the graphic interface on the PC, you can easily programme the daily time bands for the "comfort" (Tmax) and "economy" (Tmin) temperatures of the chronothermostat.

Once the temperature profiles of the various rooms have been stored on the key K471, they can be uploaded onto the chronothermostat K470H which thus automatically acquires the current time and date.

This means that any pre-setting by the user is superfluous.

NOTA. Initial chronothermostat start-up. The transfer of the weekly profile to a chronothermostat presupposes that the device is already installed on the valve, as its good functioning depends on the positive outcome of the initial start-up sequence.

For more details, refer to the installation and user instructions of the K470H chronothermostat.

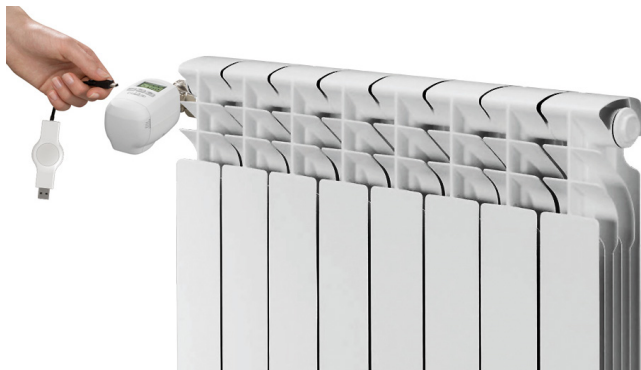
Insert the Mini-USB connector of the K471 key in the relevant connector on the side of the K470H chronothermostat.

The standard indications disappear from the display and are replaced with the code P01 (Ambient profile 1).

Using the chronothermostat selector wheel, select the required ambient profile; choose the numerical index of the ambient profile from those previously programmed with the software.

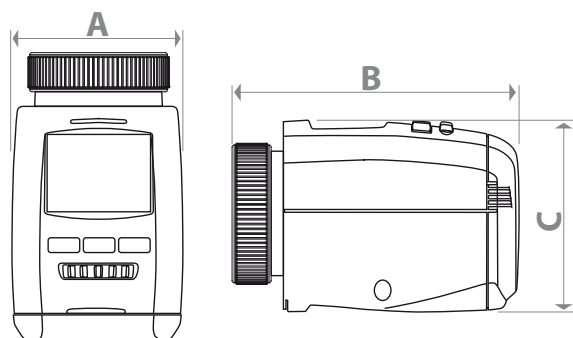
When you press the OK button, the parameters of the selected profile are transferred from the key to the chronothermostat.

As soon as the chronothermostat has been programmed, the standard information returns to the display.



NOTA. If the list of ambient profiles is not viewed via the chronothermostat wheel within 10 seconds, the display will resume the usual indications. In this case (and if necessary), take the key out and then insert it again.

➤ Dimensions



PRODUCT CODE	A [mm]	B [mm]	C [mm]
K470HX001	52	86	65

➤ Reference Standards

The K470H chronothermostat is complied with Directive 2004/108/EC.

The K471 programming key is complied with Directive 2004/108/EC.

➤ Product specifications

K470H

Chronothermostat for radiators. M30 x 1,5 mm ring nut connection (with adaptor for other valve bodies). Complete with multifunction buttons, wheel selector and LCD display for easy menu navigation. 4 programmable daily time bands. Regulation PID with answer time lower than 3 minutes. Serial port to the programmer K471 (proprietary interface and protocol). Power supply: 2 batteries 1,5 V, AA type. Protection degree IP30. Working temperature 0÷50 °C. Storage temperature -20÷70 °C. Casing in white ABS. Dimensions (LxHxW) 52 x 86 x 65 mm. Compliance with Directive 2004/108/EC.

K471

Programming key for K470H chronothermostat for radiators. USB connection to the PC and Mini-USB to the chronothermostat. Using the programming key K471 and viewing the graphic interface on the PC, you can easily programme the daily time bands for the "comfort" (Tmax) and "economy" (Tmin) temperatures of the chronothermostat. Once the temperature profiles of the various rooms have been stored on the K471 key, they can be uploaded onto the K470H chronothermostat which thus automatically acquires the current time and date. This means that any pre-setting by the user is superfluous.

⚠ Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

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