

# INSTRUCTION MANUAL FOR WEATHER STATION

## MODEL **GARNI 439** Line



# **GARNI 439** Line

## SYMBOLS



This symbol is followed by an important notice,



this symbol is followed by a note

For safe use, always follow the instructions in this documentation

## PACKAGE CONTENTS

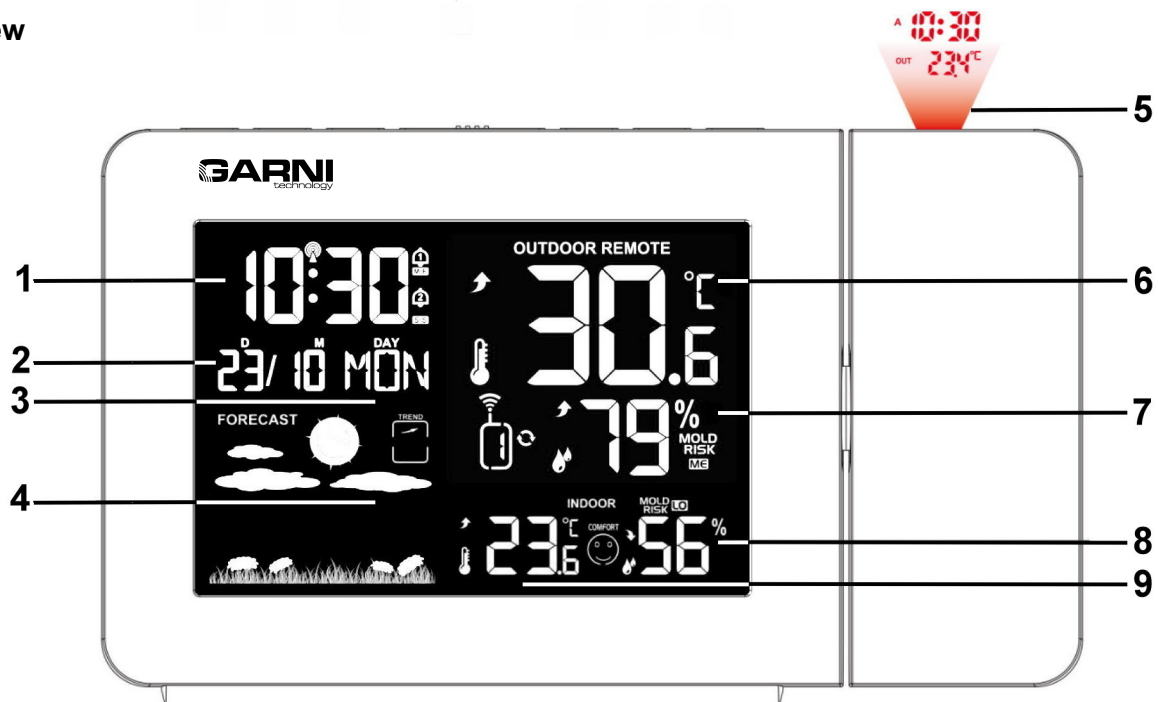
Main unit (receiver)  
Wireless sensor GARNI 030H  
AC adaptor for the main unit  
Manual

## DESCRIPTION

- inverse color display
- measurement of outdoor and indoor relative humidity (%)
- measurement of indoor and outdoor temperature (°C, or °F)
- possibility to connect up to 3 wireless sensors for measurement of temperature and relative humidity at different spots
- frost indication
- 5 icons of indoor thermal comfort
- value of the outdoor dew point and the heat index
- weather forecast icons based on monitoring of changes in barometric pressure
- memory for maximum and minimum readings of temperature and rel. humidity
- time and date controlled by DCF-77 radio signal with manual setting option
- 12- or 24-hour time display format
- 2 alarms with the option of wake-up every day or Monday to Friday
- snooze function with time adjustable from 5 to 60 minutes
- permanent display backlight option, 3 brightness levels and option to turn backlight off
- projection of time and indoor and outdoor temperature, alternating every 5 seconds
- option to turn off the projection
- the wireless sensor can be suspended or stand
- the wireless sensor is included in the delivery
- main unit powered by the AC adaptor, backup battery

## Main unit

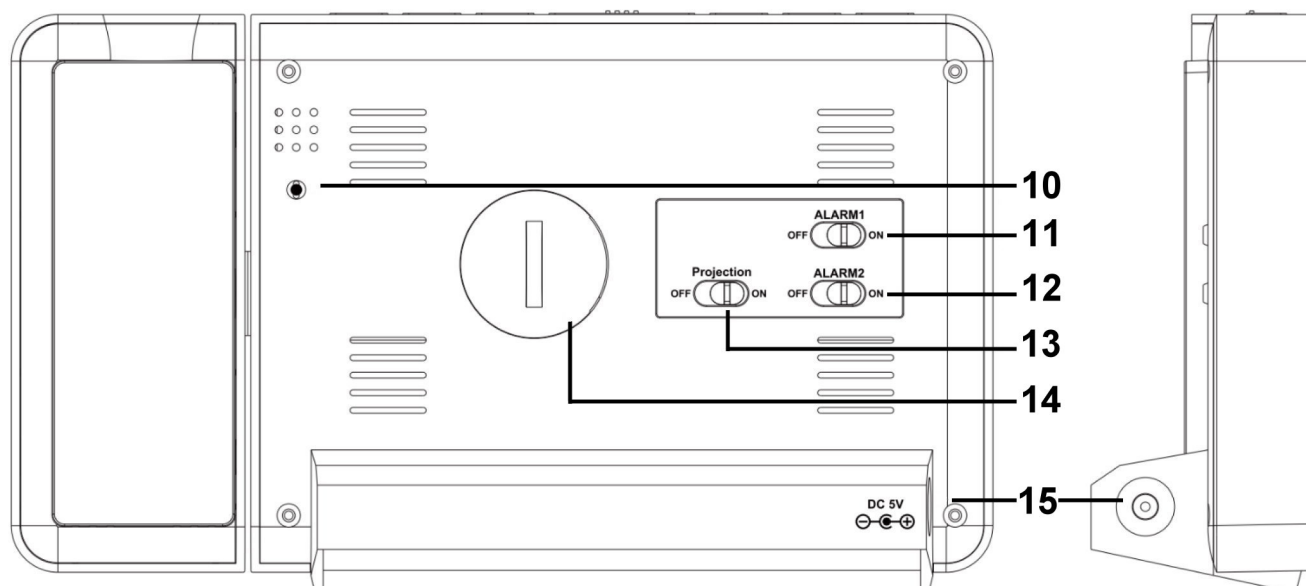
### Front view



- 1) Time
- 2) Date
- 3) Day name abbreviation
- 4) The weather forecast icon
- 5) Projection

- 6) Outdoor temperature
- 7) Outdoor relative humidity
- 8) Indoor relative humidity
- 9) Indoor temperature

## Rear and side view



10) Indoor temperature sensor

11) Alarm 1 activation / deactivation switch

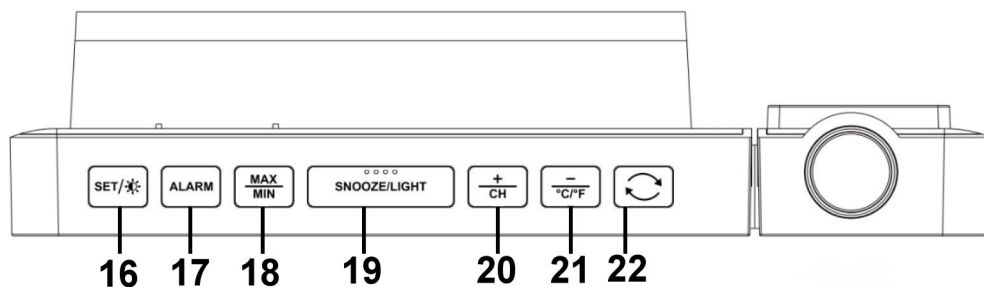
12) Alarm 2 activation / deactivation switch

13) Projection activation / deactivation switch

14) Backup battery compartment

15) AC adaptor socket

## Top view



16) Button SET/

17) ALARM button

18) Button  $\frac{\text{MAX}}{\text{MIN}}$

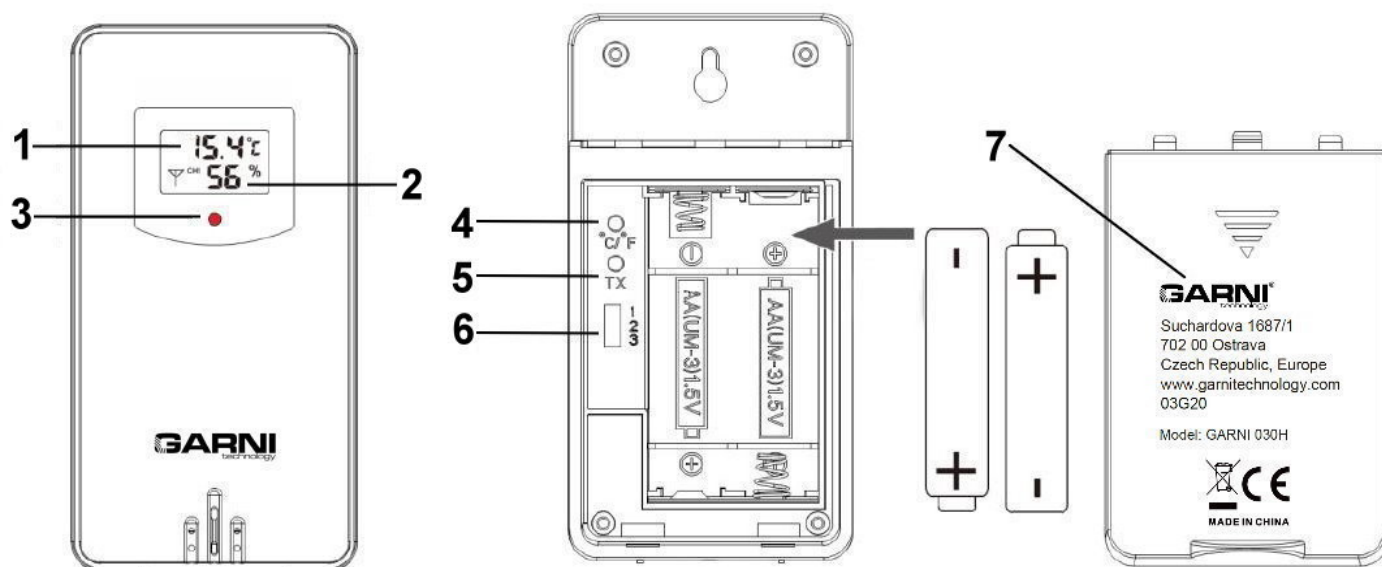
19) SNOOZE/LIGHT button

20) Button  $\frac{+}{\text{CH}}$

21) Button  $\frac{-}{^{\circ}\text{C}/^{\circ}\text{F}}$

22) Button  $\curvearrowright$

## Wireless sensor



- |                      |                              |
|----------------------|------------------------------|
| 1) Temperature       | 5) Broadcast button TX       |
| 2) Relative humidity | 6) Channel switch            |
| 3) LED               | 7) Battery compartment cover |
| 4) °C/°F button      |                              |

## COMMISSIONING

### Main unit

The main unit is powered by an AC adaptor. The battery only serves as a backup power supply for keeping the main unit settings. Use only the delivered AC adaptor.


### Backup battery installation

- 1) Remove the battery compartment cover on the rear side of the main unit by turning it to the left.
- 2) Insert 1 pc of a CR2032 battery (button), observe the correct polarity.
- 3) Close the battery compartment by turning the cover to the right.

### Connecting the AC adaptor

- 1) Connect the power adaptor plug into the socket on the side of the main unit.
- 2) Connect the other side of the AC adaptor to a mains socket.

After the power supply is connected, the display shows all segments for 3 seconds and a beep sounds.

Then, the wireless sensor signal reception icon  flashes on the display at the outdoor values (OUTDOOR REMOTE) channel number for 3 minutes.

### Wireless sensor GARNI 030H


- 1) Remove the battery compartment cover on the rear side of the wireless sensor.
- 2) Set the required channel using the switch in the battery compartment.
- 3) Insert 2 pcs AA (mini) batteries – observe the correct polarity.
- 4) Push the TX button. The temperature readings from the wireless sensor are displayed on the main unit display.
- 5) Close the battery compartment.




Once the connection of the main unit to the wireless sensor is established, place the main unit and the wireless sensor in the desired location within the range of the wireless sensor signal


## Using multiple wireless sensors

The main unit allows to connect up to 3 wireless sensors which can be placed at different spots. Each wireless sensor must be assigned its own channel number (1, 2 and 3).

- 1) Place the main unit and the wireless sensor next to each other.
- 2) Remove the battery compartment cover on the side of the wireless sensor.
- 3) Assign a number to each wireless sensor using the switch so that the numbers are unique.
- 4) Insert 2 pcs AA (mini) batteries, observe the correct polarity. Then push the TX button. The display of the main unit will display the temperature reading measured by the wireless sensor on the respective channel
- 5) To display the readings from a given wireless sensor, select the desired channel on the main unit

using button .

To automatically change the channel in ascending order, press button  repeatedly until a small arrow wheel  appears next to the channel number . The main unit will alternate between displaying the readings from all wireless sensors.

The reception of the wireless sensor signal can be also started manually by pushing button  and holding it for 3 seconds.

## Placement of the weather station

### Main unit

Select the location of the main unit away from direct sunlight. Test the connection to the wireless sensor before final installation. If there is a problem with the signal reception, select another location. You may also put the main unit on a flat surface. Placement near TVs, monitors, computers, etc. may negatively affect the reception of the DCF-77 signal and the wireless sensor signal.

### Wireless sensor

Place the wireless sensor away from direct sunlight not to compromise the measurement. Placement outdoors, at the northern wall is recommended. Obstacles such as walls, concrete, metal structures and large objects reduce the signal range. Position the wireless sensor vertically for optimum signal transmission. Maximum open space signal range is 60 meters.


The signal range may be affected by obstacles (walls, trees) and other electrical devices (TVs, monitors, etc.).


## Time controlled by the DCF-77 radio signal


The weather station is equipped with the DCF-77 time/date control signal receiver, the signal is broadcasted by a transmitter from Frankfurt am Main, Germany, with a range of about 1500 km. When outside this range, the time and date can be adjusted manually. The time and date are adjusted every day.

When the AC adaptor connector is connected to the main unit, the display lights up, all display segments are briefly displayed, and a beep sounds and the wireless sensor signal reception commences.


After the connection with the wireless sensor has been established, the reception of the DCF-77 is

commenced, indicated by flashing icon . This process may take several minutes. The display will be off during the reception of the DCF-77 signal and the functionality of the main unit will be limited. Only the

 and **SNOOZE/LIGHT** buttons will function. To terminate the DCF-77 signal reception, press the

 button and hold for 3 seconds.

When the signal is received successfully, the display shows the current time, date and signal reception icon.

The icon  shows the signal reception strength, the more bars the better the signal. The weather station will automatically receive the DCF-77 signal for time adjustment every day at 1:00, 2:00 and 3:00. If the reception is unsuccessful, it will be attempted again in another hour, five times in total. The received time is compared with the time on the main unit and adjusted if necessary. For better signal reception, place the main unit near a window.

If the DCF-77 signal is not received (icon  is not displayed), reception will be interrupted, and it will be re-attempted in an hour until the DCF-77 signal is received successfully.





### Note:

*The received DCF-77 time adjustment signal strength may be affected by the geographical location or the premises where the weather station is located.*

*For better reception, the main unit should be placed on a flat non-metallic surface, near a window on the upper floor of your house away from electrical appliances such as a TV, computer, etc.*

## Manual reception of the DCF-77 signal

Press and hold button  until the icon  is displayed and the manual search for the DCF-77 commences. If the reception is unsuccessful, the icon disappears, and the time is not adjusted automatically. After successful signal reception, the time and date will be adjusted even if they were manually set before.

## No data on display

### Reception of the DCF-77 signal not successful

1.	Check that the DCF-77 is available at your location.
2.	Start searching for the signal manually.

3.	Wait until the main unit automatically restarts the search.
4.	Set time and date manually.
Wireless sensor signal reception not successful	
1.	Check that the batteries in the wireless sensor are inserted correctly.
2.	Check that the wireless sensor is within the signal range.
3.	Press and hold button $\frac{\text{—}}{\text{°C/°F}}$ to start signal search manually.

## Manual setting of time and date, setup of the main unit

To enter the setting mode, press and hold the SET/☀ button for 3 seconds. For setting, use the  $\frac{+}{\text{CH}}$  or  $\frac{\text{—}}{\text{°C/°F}}$  buttons. Confirm the setting by a single push of the SET/☀ button, this will move to the next setting.

Setting order:

Activation (ON) / deactivation (OFF) of the DCF-77 signal reception → setting of time zone from -1 to +2 hours (for the Czech and Slovak Republic leave 00) → setting time display format 12 or 24 hours (12Hr / 24Hr) → setting current hour → setting current minute → setting current year → setting current month → setting current day → setting the date display order day-month (D-M), or month-day (M-D) → setting the language of the day name abbreviation → setting the default weather forecast icon according to the current weather

The setting mode is terminated by the last confirmation.



**Note:** If no button is pressed for 30 seconds, the setting mode will be terminated.

### Day name abbreviations

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
GER - German	MON	DIE	MIT	DON	FRE	SAM	SON
ENG - English	MON	TUE	WED	THU	FRI	SAT	SUN
FRE - French	LUN	MAR	MER	JEU	VEN	SAM	DIM
ITA - Italian	LUN	MAR	MER	GIO	VEN	SAB	DOM
SPA - Spanish	LUN	MAR	MIE	JUE	VIE	SAB	DOM
DUT - Dutch	MAA	DIN	WOE	DON	VRI	ZAT	ZON
DAN - Danish	MAN	TIR	ONS	TOR	FRE	LOR	SON

## Weather forecast

The forecast is based on the change in barometric pressure, generally speaking when the barometric pressure rises, the weather improves and vice versa. The forecast accuracy is 75% and is valid for the next 12 to 24 hours for the area within a radius of 30 to 50 km.

The weather forecast uses six icons – sunny, somewhat cloudy, cloudy, precipitation, heavy rain and snow.

Sunny	Somewhat cloudy	Cloudy	Precipitation	Heavy rain	Snow






**Note:** the snow icon replaces the precipitation or heavy rain icons if the outdoor temperature from the channel 1 sensor is below -4°C. If the channel 1 is not used, it is the temperature from



channel 2 sensor, if channel 2 is not used, then it is the temperature from the channel 3 sensor.

### Weather trend arrows



The weather station updates the weather trend arrows according to the barometric pressure reading

Barometric pressure increased	Barometric pressure unchanged	Barometric pressure decreased
		

E.g.: the weather forecast indicates rain, the barometric pressure drops abruptly and quickly, therefore the probability of heavy rain is higher.






### Arrows of temperature / relative humidity trends

The main unit displays the trend icons of the measured quantities based on the temperature and relative humidity readings. If there is no arrow displayed, there is no change.

Temperature / relative humidity increases	Temperature / relative humidity decreases
	

### INDOOR THERMAL COMFORT ICONS

The thermal comfort is the feeling a person perceives in a given environment. The thermal comfort condition in the given environment is shown on the basis of the readings of temperature and relative humidity using 5 icons.

Icon	Temperature / Humidity
	Temperature: very pleasant Humidity: very pleasant
	Temperature: pleasant Humidity: pleasant
	Temperature: higher or lower temperature than pleasant Humidity: higher or lower humidity than pleasant
	Temperature: unpleasant cold or hot Humidity: unpleasant dry or wet
	Temperature: too cold or hot Humidity: too dry or wet

### CHANGING THE TEMPERATURE UNITS

To change the temperature units to Centigrade °C or Fahrenheit °F press button  $\frac{\text{—}}{^{\circ}\text{C}/^{\circ}\text{F}}$ .

### DISPLAYING MAX. AND MIN. READINGS, OUTDOOR HEAT INDEX / DEW POINT

Press button  $\frac{\text{MAX}}{\text{MIN}}$  repeatedly to display the maximum and minimum temperature and relative humidity readings, outdoor dew point and outdoor heat index separately for each channel in case more wireless sensors are in use. Select the required channel with the  $\frac{+}{\text{CH}}$  button.

Press and hold the  $\frac{\text{MAX}}{\text{MIN}}$  button for 2 seconds to erase the recording of all maximum and minimum readings. The memory is also automatically erased at 00:00 every day.

## FROST INDICATION





As soon as the outdoor temperature is between  $-1^{\circ}\text{C}$  and  $+3^{\circ}\text{C}$ , the icon **ice** will flash

## SETTING WAKE-UP TIME AND SNOOZE FUNCTION

- 1) Press the **ALARM** repeatedly to display the alarm 1 (**AL 1**) or alarm 2 (**AL 2**) wake-up time.
  - 2) Press again the **ALARM** button for 3 seconds until the wake-up hour of alarm 1 (**AL 1**) starts to flash.
  - 3) Press button  $\frac{+}{\text{CH}}$  or  $\frac{-}{^{\circ}\text{C}/^{\circ}\text{F}}$  to set the required wake-up hour.
  - 4) Press the **ALARM** button, the set wake-up minute flashes on the display.
  - 5) Press button  $\frac{+}{\text{CH}}$  or  $\frac{-}{^{\circ}\text{C}/^{\circ}\text{F}}$  to set the required wake-up minute.
  - 6) Press the **ALARM** button, the text **M-F** starts to flash.
  - 7) Press the  $\frac{+}{\text{CH}}$  or  $\frac{-}{^{\circ}\text{C}/^{\circ}\text{F}}$  button to set the wake-up from Monday to Friday (**M-F**), or on Saturday and Sunday (**S-S**), or on every day (**M-F** and **S-S** flash together).
  - 8) Press the **ALARM** button. The digits „05 Zz“ start to flash.
  - 9) Use buttons  $\frac{+}{\text{CH}}$  and  $\frac{-}{^{\circ}\text{C}/^{\circ}\text{F}}$  to set the required snooze time from 5 to 60 minutes, or OFF (deactivated). Hold the button for faster change of the values.
  - 10) Press the **ALARM** button. Repeat the same procedure for alarm 2 (**AL 2**)
- After each setting always press the **ALARM** button

### Activating and deactivating the alarm clock



To activate or deactivate alarm 1 slide the **ALARM 1 ON/OFF** switch on the rear side to the ON position (activated) or OFF (deactivated). Alarm 1 is activated if the icon  is displayed.

To activate or deactivate alarm 2 slide the **ALARM 2 ON/OFF** switch on the rear side to the ON position (activated) or OFF (deactivated). Alarm 2 is activated if the icon  is displayed.

The wake-up alarm will be repeated after 24 hours at the set time.

### Snooze function

To deactivate the current snooze function, push any button except **SNOOZE/LIGHT**.

To activate the SNOOZE function, push the **SNOOZE/LIGHT** button while the alarm is active, icons  ,  or **ZZ** will flash and the alarm will be postponed for the set time, and then reactivated. This process may be repeated.

If no button is pressed, the alarm will deactivate automatically after 2 minutes. The wake-up alarm will be repeated after 24 hours at the set time.

## PROJECTION


The weather station has a projection of time, and every 5 seconds alternating projection of the indoor (IN) and outdoor (OUT) temperatures from the currently displayed channel. The ideal distance of the projection surface is 1 to 3 meters in an unlit room. The projector tube can be tilted by  $90^{\circ}$  back and  $90^{\circ}$  forward. The projection can be activated (ON) or deactivated (OUT) using the **Projection** switch on the rear of the main unit.




To rotate the projected image by 180°, push the  button once. To decrease or increase projection brightness press and hold the  for 3 seconds.

Projection is off while receiving the DCF-77 signal for time and date adjustment.

## DISPLAY BACKLIGHT

The main unit is powered by an AC adaptor, the battery serves only as a backup. The display can be backlit permanently or turned off. Press the SET/ button repeatedly to select the backlight in 3 brightness levels or turn off the display backlight.

## Empty battery icons

Empty battery icon  on the main unit display:

- in the indoor quantities area – the main unit batteries are empty
- in the outdoor quantities area – batteries of the wireless sensor are empty

## TROUBLESHOOTING

### problem / situation

### solution

DCF-77 signal not received

relocate the main unit; start the manual signal search; set the time and date manually

instead of temperature and humidity readings the display shows: H.HH or LL.L

temperature readings are outside the measurable range

the weather station is not working correctly

reset the factory settings of the main unit by removing the batteries and disconnecting the AC adaptor for 30 seconds

intermittent connection between the main unit and the wireless sensor

reduce the distance between the main unit and the wireless sensor or relocate them

between the main unit and the wireless sensor there are metal structures, frames etc.

relocate the main unit and the wireless sensor so that there are minimum obstacles between them which reduce the signal range

the main unit or the wireless sensor are located close to other electrical devices

relocate the main unit and the wireless sensor further away from other electrical devices to prevent signal interference

the current time on the main unit differs by one or two hours

a wrong time zone was probably selected

the temperature reading from the wireless sensor is too high

place the sensor away from direct sunlight and heating



## SAFETY PRECAUTIONS

- Do not expose the device to excessive force, shocks, dust, temperature and humidity
- Do not cover the ventilation holes with any objects like newspapers, curtains, etc.
- Never immerse the device in water. If you spill liquid on it, dry it immediately with a soft, lint-free cloth

- Do not clean the device with abrasive or corrosive substances
- Do not handle the internal components of the device, as this will void your warranty
- Use only fresh batteries. Never mix fresh and old batteries
- Do not recharge the batteries. Place the station and its parts outside the reach of children
- Do not throw old batteries to unsorted municipal waste, but use the designated areas
- Dispose of this product in accordance with applicable regulations
- Use only accessories specified by the manufacturer
- Do not interfere with the internal circuits of the device, as this may void the warranty
- The technical specifications are subject to change without notice

## TECHNICAL PARAMETERS

### Main unit

Power supply:	AC adaptor 230-240 V, 50Hz, 50 mA / 5V, 150 mA 1 pc backup battery 3 V CR2032 (button)
Temperature measurement range:	-9,9°C to +50°C
Accuracy of measurement:	+/- 1°C
Resolution:	0.1°C
Rel. humidity measurement range:	20% to 95%
Accuracy of measurement:	+/- 5%
Resolution:	1%
Dimensions:	167 x 99 x 38 mm

### Wireless sensor GARNI 030H

Power supply:	2 pcs of 1.5 V AA batteries (mini)
Outdoor temperature measurement range:	-40°C to +70°C
Accuracy of measurement:	+/- 1°C
Resolution:	0.1°C
Rel. humidity measurement range:	20% to 95%
Accuracy of measurement:	+/- 5%
Resolution:	1%
Data transmission frequency:	433.92 MHz
Number of channels:	3
Maximum RF power:	10 dBm (10 mW)
Wireless sensor signal range:	up to 60 m (in open space)
Measurement interval:	about 69 s
Dimensions:	49 x 95 x 32 mm

GARNI technology a.s. hereby declares that the type of the radio equipment - weather station type GARNI 439 Line conforms to the Directive 2014/53/EU. The full EU Declaration of Conformity is available on the following website: [www.garni-meteo.cz](http://www.garni-meteo.cz)

*The manual was prepared for GARNI technology a.s. by Roman Gajda.  
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**Version 03G20**

