WN2810 WeatherSpy Multi-Channel Desktop Weather Station

WeatherSpy Multi-Channel Weather Station User Manual

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1 Introduction

1.1 Mode d'emploi en français

Téléchargez ce manuel d'instructions en français sur aercusinstruments.com/manuals/

1.2 Manuale Operativo in italiano

Scarica questo manuale di istruzioni in italiano da aercusinstruments.com/manuals/

1.3 This instruction manual

Thanks for purchasing this WN2810 WeatherSpy multi-channel weather. This device measures temperature, humidity, barometric pressure and displays moon phase and a weather tendency forecast. This device can receive signals up to three temperature/humidity sensors.

Please read this manual and retain it for future reference.

2 Product Features

Figure 1

1) Perpetual calendar
2) Time alarm with snooze
3) Moon phase
4) Weather forecast
5) Barometric pressure (inHg, mmHg or hPa)

6) Wireless outdoor temperature (°C or °F) and humidity (%RH)

7) Support up to three outdoor sensors measuring temperature and humidity in different locations

8) Records minimum and maximum temperature and humidity

9) Indoor temperature (°C or °F) and humidity (%RH)

10) Time and date set from DCF atomic clock (European 868MHz version only)

11) LED backlight

12) Wall hanging or free standing

13) Included transmitter (Outdoor sensor)

14) Synchronized instant reception

3 Getting started

Please set apply power to the devices in the order described here – transmitters followed by console/receiver.

3.1 Parts list

One Display Console
One Thermo/Hygro Sensor Unit

One Power Adaptor
One Manual

3.1.1 Console

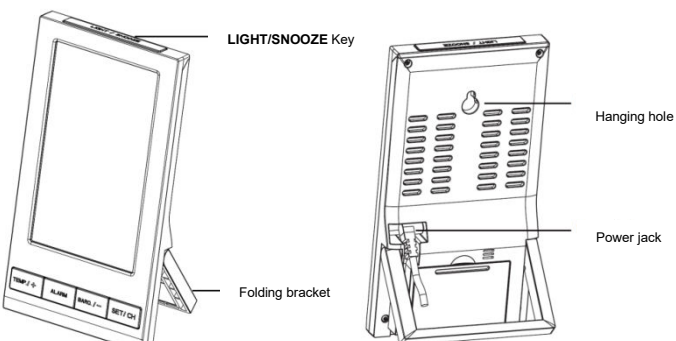


Figure 2

3.1.2 Remote sensor

Figure 3

3.2 Thermo-Hygrometer Sensor Set Up

Note: To avoid operating problems, please take note of battery polarity before/when inserting any batteries (the unit could be permanently damaged incorrect insertion). Do not use rechargeable batteries. We recommend fresh alkaline batteries for miler outdoor temperature ranges and fresh lithium batteries for colder outdoor temperatures.

1. Place the transmitter about 2 to 3m away from the console. With multiple transmitters, make sure all transmitters are powered up.

2. Remove the battery door on the back of the thermo-hygrometer sensor by sliding down the battery door.

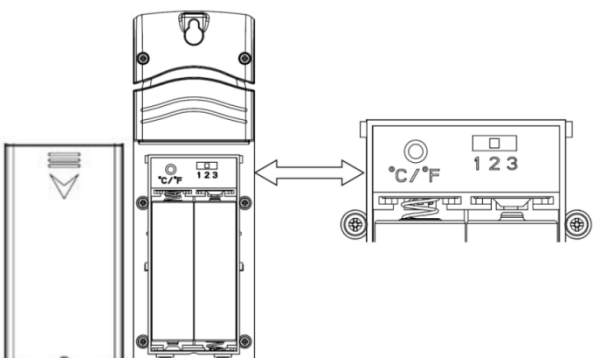


Figure 4

3. **BEFORE** inserting the batteries, locate the switches on the inside cover of the lid of the transmitter (see figure 4).

4. **Channel Number:** the WeatherSpy supports up to three sensors. Choose a channel number for each transmitter by, sliding the button.

5. **Temperature units of measure:** To change the sensor display units of measure between °C and °F, press the round button marked C/F.

6. Insert two AA batteries

7. Wait for a few seconds until temperature and humidity displayed on the LCD screen of sensors.

8. Verify the correct channel number (CH) and temperature units of measure are on the display, as shown in Figure 5.

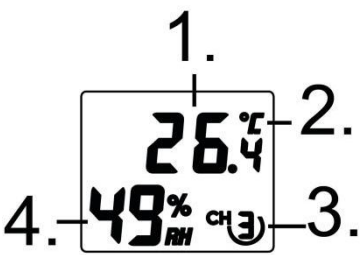


Figure 5

(1) Temperature
(2) Temperature units (°C and °F)
(3) Channel number
(4) Relative humidity

9. Close the battery door.

10. Repeat for each additional remote sensor, verifying each remote is on a different channel.

3.3 Sensor Operation Verification

Each temperature and humidity sensor will read similar but not necessarily identical values.

Temperature readings should be within 2°C of each other (the accuracy is ± 1°C). Allow about 30 minutes for all sensors to stabilise.

The humidity readings should be 10% of each other (the accuracy is ± 5%). Allow about 30 minutes for all sensors to stabilise.

3.4 Radio-Controlled Clock

Note: Only supported in the 868MHz version, within range of the DCC signal.

After the remote sensor is powered up, the sensor will transmit weather data for 30 seconds, and then the sensor will begin waiting for radio-controlled clock (RCC) reception. During this period, lasting up to five minutes, no weather data will be transmitted to avoid interference. Once received successfully, the RCC reception icon  will show on the outdoor sensor LCD display.

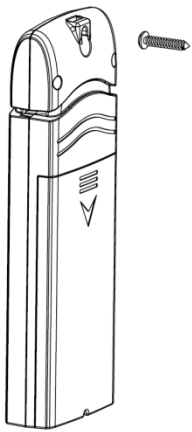
The outdoor sensor then sends the RCC signal to display console, Once the radio controlled time is received, RCC reception icon  will show on the display console.

If the signal reception linking is not successful within five minutes, the signal search will stop and will automatically resume every six hours until the signal is successfully captured. The regular data link will resume once the RCC reception routine is finished. In some locations, RCC signal may take a couple of days to be acquired.

3.5 Remote Sensor Installation

Before mount the units, ensuring that the receiver can still pick up the signal from transmitters. Please mount the sensors in a sheltered position, out of direct sunlight. Direct sunlight and radiant heat sources will result in inaccurate temperature readings. Although the sensors are water resistant, it is best to mount in a covered area, such as under the eaves or an awning.

Use a screw or nail to affix the remote sensor to the wall, as shown in Figure 6 or hang the remote sensor up on string, as shown in Figure 7.



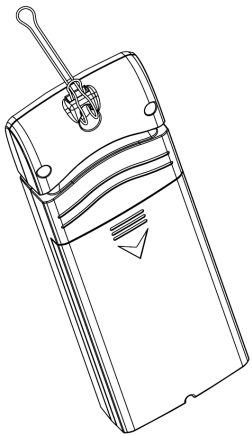


Figure 6 Figure 7

3.6 Display Console Set Up

Place the remote thermo-hygrometer about 2 to 3 meters away from the display console (if the sensor is too close, it may not be received by the display console).

1. Insert the power adapter into the power jack of the console and plug in the adapter. The LCD display will beep once and then light up. The brightness selection is set to high when plugged into the adapter. Press the **LIGHT/SNOOZE** key can adjust

among HIGH/MIDDLE/OFF level according to your preference.

2. Remove the battery door on the back of the display. Insert three AAA (alkaline or lithium, avoid rechargeable) batteries in the back of the display console.

   Note: To avoid permanent damage, please take note of the battery polarity before inserting the batteries.

3. Replace the battery door and fold out the desk stand and place the console in the upright position.

   Note: The batteries are intended for back-up power only. The backlight will remain on for 5 seconds when on battery power only. For continuous backlight you need to use the power adapter.

4. The console will instantly display indoor temperature, humidity, barometer, moon phase, date, and time. The remote search icon will turn on:

3.7 Display Console Layout

Note: The following illustration shows the full segments of the LCD for description purposes only and will not appear like this during normal operation.

Figure 8

1. Time
2. Moon phase
3. Weather forecast icon
4. Day of week
5. Date
6. Absolute/relative barometric pressure selection
7. Barometric pressure
8. Outdoor sensor signal
9. Outdoor temperature
10. Max outdoor temperature
11. Min outdoor temperature
12. Channel number
13. Outdoor humidity
14. Min Outdoor humidity
15. Max outdoor humidity
16. Indoor temperature
17. Max indoor temperature
18. Min indoor temperature
19. Indoor humidity
20. Min indoor humidity
21. Max indoor humidity
22. MAX/MIN DAILY icon

4 Console Operation

The console has four keys for easy operation: **TEMP./+** key, **ALARM** key**, BARO./-** key and **SET/CH** key. There are four program modes: Setup Mode, Alarm Mode, Calibration Mode and Min/Max Mode.

Any program mode can be exited at any time by either pressing the **SNOOZE/LIGHT** key (on the top of the display console) or waiting for the 30-second time-out to take effect.

4.1 Setup Mode

To enter Setup Mode, hold the SET/CH key for 2 seconds. You can then cycle through the setup options by pressing the SET/CH button multiple times, in the following order:

SET/CH	Mode	Settings
0	Beep On/Off	Press **TEMP./+** or **BARO./-** to toggle OFF and ON
1	RST- Reset max/min at 0:00	Press **TEMP./+** or **BARO./-** to toggle OFF and ON
2	Time Zone (TZ)	Press **TEMP./+** to increase. **BARO./-** to decrease
3	12/24 Hour Format	Press **TEMP./+** or **BARO./-** to toggle between 12-hour (12h) and 24-hour (24h) format
4	Hour of Day	Press **TEMP./+** to increase. **BARO./-** to decrease
5	Minutes	Press **TEMP./+** to increase. **BARO./-** to decrease

6	D-M/M-D Format	Press **TEMP./+** or **BARO./-** to toggle between D-M and M-D format
7	Year	Press **TEMP./+** to increase. **BARO./-** to decrease
8	Month of Year	Press **TEMP./+** to increase. **BARO./-** to decrease
9	Day of Month	Press **TEMP./+** to increase. **BARO./-** to decrease
10	Temperature Units of Measure	Press **TEMP./+** to toggle between °C and °F
11	Barometric Pressure Units of Measure	Press **TEMP./+** to toggle between inHg, mmHg and hPa

12	Northern hemisphere (NTH) or Southern hemisphere (STH) select	Press **TEMP./+** to toggle between Northern and Southern hemisphere
13	Exit Set Mode	

4.1.2 Setup Mode Operation

While in Normal Mode, press and hold **SET/CH** key for 2 seconds enter Setup Mode. The first setting will begin flashing. You can press the **SET/CH** key again to skip any step, as defined below.

1. **Beep** on/off. The BEEP (ON or OFF) setting will begin flashing. Press the **TEMP./+** key to toggle between BEEP ON and BEEP OFF.

2. **MAX/MIN record reset** ON/OFF. Press **SET/CH** key again, **RST** (ON or OFF) will begin flashing. This function is to switch off/on the automatically reset of MAX/MIN record at 0:00 every day, which is default turned on. Press **TEMP./+** key to toggle between RST ON and RST OFF.

3. **Time Zone Settings**. Press the **SET/CH** key again to adjust the Time Zone (TZ) setting.

Press the **TEMP./+** key or **BARO./-** key to adjust the time zone from -12 to 12, based on the number of hours from Coordinated Universal Time, or Greenwich Mean Time (GMT).

4. **12/24 Hour Format**. Press the **SET/CH** key again to adjust the 12/24-hour format setting. Press the **TEMP./+** key to change between 12-hour and 24-hour format.

5. **Change Hour.** Press the **SET/CH** key again to set the hour. Press the **TEMP./+** key or **BARO./-** key to adjust the hour up or down.

6. **Change Minute.** Press the **SET/CH** key again to set the minute. Press the **TEMP./+** key or **BARO./-** key to adjust the minute.

7. **D-M/M-D Format.** press the **SET/CH** key again to adjust the D-M/M-D format setting. Press the **TEMP./+** key to change between D-M and M-D format.

8. **Set Year.** Press the **SET/CH** key again to set the calendar year. Press the **TEMP./+** key or **BARO./-** key to adjust the calendar year.

9. **Set Month.** Press the **SET/CH** key again to set the calendar month. Press the **TEMP./+** key or

BARO./- key to adjust the calendar month.\

10. **Set Day.** Press the **SET/CH** key again to set the calendar day. Press the **TEMP./+** key or **BARO./-** key to adjust the calendar day.

11. **Temperature Units** (Celsius or Fahrenheit). Press the **TEMP./+** key again to toggle the temperature units from Celsius to Fahrenheit.

12. **Barometric Pressure Display Units** (hPa, mmHg or inHg). Press the **SET/CH** key again to toggle the pressure units between hPa, mmHg or inHg.

13. **Northern Hemisphere (NTH) or southern Hemisphere (STH) select**. Press the **SET/CH** key again to toggle the pressure units between NTH or STH.

Note: In the Set mode, press the **TEMP./+** key or **BARO./-** key to change or scroll the value. Hold the **TEMP./+** key or **BARO./-** key for 3 seconds to increase/decrease rapidly.

Note: Press the **LIGHT/SNOOZE** key (or wait 30 seconds for the programming mode to timeout), and the Set Mode will return to Normal Mode.

4.2 Changing Remote Sensor Channels

If your device has multiple optional extra sensors, you can cycle between the with multiple sensors. While in normal mode, press SET/CH key repeatedly move between channels – the data will be displayed in the Outdoor segment of the console.

4.3 Barometric Pressure

4.3.1 Barometric Pressure History

While in normal mode, press **BARO./-** to check the barometric pressure. Press the **BARO./-** button to switch to past 12hr/24hr/48hr/72hr average pressure. To exit the barometric pressure history mode, press the **SNOOZE/LIGHT** key (on the top of the display console), or wait 30 seconds for the timeout to take effect.

4.3.2 Relative Pressure Calibration

We recommend viewing your pressure data in Relative mode and calibrating your device to a local trusted source such an airport or official weather station if available, or internet source otherwise.

4.3.3 Relative vs. Absolute Pressure

While in normal mode, Press and hold the **BARO./-** button for 2 seconds you can switch between absolute (ABS) pressure and relative (REL) pressure.

The display console displays two different pressures: absolute (as measured) and relative (corrected to sea-level).

To compare pressure conditions from one location to another, meteorologists correct pressure to sea-level conditions. Because the air pressure decreases as you rise in altitude, the sea-level corrected pressure (the pressure your location would be at if located at sea-level) is generally higher than your measured pressure.

Thus, your absolute pressure may read 969hPa at an altitude of 305m, but the relative pressure could be 1016hPa.

Standard sea-level pressure is 1013hPa/29.92inHg. This is the average sea-level pressure around the world. Relative pressure measurements greater than 1013hPa are considered high pressure and relative pressure measurements less than 1013hPa are considered low pressure.

4.4 Dew point

While in normal mode, Press the **TEMP/+** key to view the Dew Point of current channel in the outdoor temperature segment. If key idle 30 seconds, the display will return to normal mode.

To exit the Dew Point display mode, press the **SNOOZE/LIGHT** key (on the top of the display console), or wait 30 seconds for the timeout to take effect.

4.5 Alarm Mode

While in normal mode, press the **ALARM** key to view the alarm time. The alarm icon will be displayed in the time field.

4.5.1 Time Alarm

Press **ALARM** button once, you will see the Alarm time.

Press and hold the **ALARM** button for 2 seconds, you will enter Alarm Setting mode. Please follow the below sequence to operate settings:

1. Press the **TEMP./+** and **BARO/-** button to change the hour.

2. Press **SET/CH** to confirm the hour and skip to minute setting or press the **TEMP./+** and **BARO/-** button to change the minute.

3. Press **SET/CH** to confirm the minute and skip to alarm on/off setting. Press **TEMP./+** and **BARO/-** button to switch on/off the time alarm.

4. Press **SET/CH** to skip to Low Temperature Alarm on/off setting. Press **TEMP./+** and **BARO/-** button to switch on/off the low temperature alarm (see 4.5.2).

5. Returns to the normal display mode.

4.5.2 Low Temperature Alarm

Low Temperature Alarm is triggered when outdoor temperature falls into or rises into the 2-3°C range. If it falls into this temperature range, the low temperature alarm would be triggered. The LO temperature icon will appear and flash on the console. 

If Beep is switched on, an audible alarm will also be activated.

Figure 9

4.5.3 Cancelling an alarm

When an alarm is triggered, press any key to silence the audible alarm or press **LIGHT/SNOOZE** to snooze it.

The Low Temperature Alarm will reset automatically.

4.6 Calibration Mode

While in Normal Mode, press and hold the **SET/CH** and **BARO./-** buttons for five seconds to enter Calibration Mode

Note: the SET mode will appear after three seconds. Continue holding the two keys until you see the CAL icon appear in the upper right-hand corner of the display.

The calibration sequence is as below:

1. CH1 Outdoor temperature calibration
2. CH1 Outdoor humidity calibration
3. CH2 Outdoor temperature calibration
4. CH2 Outdoor humidity calibration
5. CH3 Outdoor temperature calibration
6. CH3 Outdoor humidity calibration
7. Indoor temperature calibration
8. Indoor humidity calibration
9. Absolute pressure calibration

In calibration mode, press **+** and **-** buttons to adjust offset values, then press **SET/CH** to confirm and proceed to next parameter. Press the **ALARM** button to cancel offset values.

Example 1:

The calibrated temperature from a red spirit thermometer, or actual temperature is 30.0 °C

The uncalibrated or measured temperature is 28.7 °C.

Offset = Calibrated Temperature – Uncalibrated Temperature = 30.0 – 28.7 = 1.3 °C.

Enter the temperature offset +1.3 -2.6hPa.

Example 2:

The calibrated absolute pressure from a calibrated pressure sensor, or actual absolute pressure is 968.8hPa.

The uncalibrated or measured absolute pressure measured by the weather station is 971.4hPa.

Offset = 968.8– 971.4 = -2.6hPa

Enter the absolute pressure offset -2.6hPa

Note: The absolute pressure offset will also affect the relative pressure. To adjust the relative pressure, only (independent of the absolute pressure), see 5.1.

Normally, you would not calibrate the absolute pressure because it is difficult to obtain a calibrated source. The preferred method is to calculate relative pressure to an official source near you, as described in Section 4.3.2.

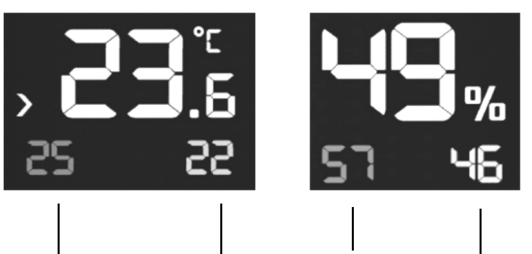
During calibration mode, press **LIGHT/SNOOZE** to exit calibration mode.

The calibration offsets can be adjusted in the ranges below:

Temperature: +/- 5°C
Humidity: +/-9%
Pressure: +/-10hpa

4.7 MAX/MIN Mode

The Max/Min weather data are displayed on the bottom of each parameter segment. To the left in red is the MAX record, to the right in blue or yellow is the MIN record. All the MAX/MIN records are based on since last reset.



Max temp Min temp Max hum Min hum

All MAX/MIN records of all sensors can be cleared if you press and hold the TEMP button for 2 seconds.

MAX/MIN records are cleared on 0:00 every day by default. When set, the MAX/MIN DAILY icon (shown

below) is displayed on the console. You can switch this off this Setup Mode (see to 4.1.2, item 2 - RST ON/OFF in the Quick Reference Guide), and this icon will disappear.

4.8 Other Console Features

4.8.1 Colour Weather Forecasting

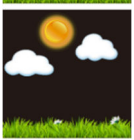
This station learns. Please allow 30 days for barometric calibration. This will ensure an accurate personal forecast for your location.

Six colour forecast icons use changing atmospheric pressure to predict weather conditions for the next 12-hours .

Note: The weather forecast, or pressure tendency is based on the rate of change of barometric pressure. In general, when the pressure increases, the weather improves and when the pressure decreases, the weather degrades.

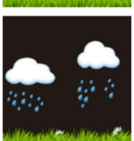
Note: Snowy icon will appear in place of rainy and stormy icons when the outdoor temperature is below 0 °C /32°F.

Sunny



Partly Cloudy

Cloudy



Rainy

Stormy

Snowy

4.8.2 Moon phase

The following moon phases are displayed based on the calendar date.

				
New	Waxing Crescent	First Quarter	Waxing Gibbous	Full
				
Waning Gibbous	Third Quarter	Waning	New	

Note: Above icons are for Northern Hemisphere areas. For Southern Hemisphere, the icons are as below:

				
New	Waxing Crescent	First Quarter	Waxing Gibbous	Full
				
Waning Gibbous	Third Quarter	Waning	New	

4.8.3 Temperature/Humidity Trends

The temperature and humidity trend indicators update every 30 minutes. The trend reflects changes over the past 3 hours. For example: 6:00 is compared with 3:00 data and 6:30 is compared with 3:30.

Temperature or humidity have increased in past 3 hours	Temperature or humidity have not changed in past 3 hours	Temperature or humidity have decreased in past 3 hours
		

4.8.4 Pressure Tendency Arrows

The forecast trend indicators update every 30 minutes. The trend reflects changes in pressure (1 hPa) over the past 3 hours.

Pressure is rising, weather expected to improve	Pressure is unchanged	Pressure is falling, weather expected to worsen
		

4.8.5 Restoring Lost Connections

If the signal is lost between the remote sensor/transmitter and the display console/receiver you

can force a resynchronisation. To resynchronize, in Normal Mode, Press and hold **SET/CH** and **TEMP** button for 5 seconds, to register the outdoor transmitter.

Please wait several minutes for the remote sensor reports in. Do not touch any buttons until synchronization is complete.

If the synchronization fails, reset the console by removing one battery from the display console, wait 10 seconds, and reinsert the battery, as specified in the console set up section.

5. Glossary of Terms

Term	Definition
Absolute Barometric Pressure	Relative barometric pressure corrected to sea-level. To compare pressure conditions from one location to another, meteorologists correct pressure to sea-level conditions. Because the air pressure decreases as you rise in altitude, the sea-level corrected pressure (the pressure your location would be at if located at sea-level) is generally higher than your measured pressure.

Accuracy	Accuracy is defined as the ability of a measurement to match the actual value of the quantity being measured.
Hectopascals (hPa)	Pressure units in SI (international system) units of measurement. Same as millibars (1 hPa = 1 mbar)
Hygrometer	A hygrometer is a device that measures relative humidity. Relative humidity is a term used to describe the amount or percentage of water vapor that exists in air.
Inches of Mercury (inHg)	Pressure in Imperial units of measure. 1 inch of mercury = 33.86 millibars
Range	Range is defined as the amount or extent a value can be measured.
Relative Pressure	Measured barometric pressure relative to your location or ambient conditions.

6. Specifications

Frequency: 915MHz (AU/NZ), 868MHz (EU/UK)

Indoor Sensors:
Temperature range: 0°C – 60°C
Temperature resolution: 0.1°C
Temperature accuracy: ± 1°C

Outdoor Sensors:
Temperature range: -40°C – 60°C (14°F - 140°F)
Temperature resolution: 0.1°C, or 0.1°F
Temperature accuracy: ± 1°C

Humidity range: 10% - 99%
Humidity resolution: 1%
Humidity accuracy: ± 5% (between 20% and 90%)

Pressure range: 300hpa to 1100hpa
Pressure resolution: -.1hPa
Pressure accuracy: ±3 hPa (between 700 and 1100hPa)
Sensor reporting interval: 48 seconds

Power Consumption:
Console: 5V DC adaptor (included) and 3x AAA 1.5V Alkaline batteries (not included)

Remote sensors: 2 x AA 1.5V Alkaline batteries (not included)

Battery life: 12 months for console and 24 months for thermometer-hygrometer sensor (use lithium batteries in cold weather climates)

This handbook may contain mistakes and printing errors. The information in this handbook is regularly checked and corrections made in the next issue. We accept no liability for technical mistakes or printing errors - or their consequences.

7. Contact Information

We warrant our products to be free of defects in components and workmanship, under normal use and service, for one year from the date of original purchase. For product support and warranty claims please contact the following:

Purchased in UK/EU: Please contact our local distributor Greenfrog Scientific greenfrogscientific.co.uk and their team will be happy to help.

Purchased in AUSTRALIA: Please contact our local distributor Monax Test & Weather monaxtestandweather.com.au and their team will be happy to help.

Purchased in NEW ZEALAND: Please contact our local distributor Scientific Sales scientificsales.co.nz and their team will be happy to help.

For all others, please contact the retailer who sold you this item.

EU DECLARATION OF CONFORMITY

Hereby, Aercus Instruments, declares that this Wireless Weather Station (Model: WH31) is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. A copy of the signed and dated Declaration of Conformity is available on request from contact@aercusinstruments.com.

COUNTRIES RTTE APPROVAL COMPLIED
All EU countries

DECLARATION DE CONFORMITE UE

Par la présente, Aercus Instruments, déclare que cette station météo sans fil (Modèle : WH31) est conforme aux exigences essentielles et autres dispositions pertinentes de la Directive 1999/5/CE. Une copie de la Déclaration de conformité datée et signée est disponible sur simple demande auprès de contact@aercusinstruments.com.

CONFORMITE AUX EXIGENCES NATIONALES RTTE
Tous les pays de l'Union européenne

DICHIARAZIONE DI CONFORMITÀ UE

Con la presente, Aercus Instruments dichiara che questa Stazione Meteorologica Wireless (modello: WH31) è conforme ai requisiti essenziali e alle altre disposizioni pertinenti della Direttiva 1999/5 / CE. Una copia della Dichiarazione di Conformità, firmata e datata, è disponibile su richiesta all'indirizzo contact@aercusinstruments.com.

PAESI RTTE DI COMPLETATA OMOLOGAZIONE

Tutti i paesi dell'UE

UK DECLARATION OF CONFORMITY

Hereby, Aercus Instruments, declares that this Wireless Weather Station (Model: WH31) is in compliance with the essential requirements and other relevant provisions of the Electromagnetic Compatibility Regulations 2016. A copy of the signed and dated Declaration of Conformity is available on request from contact@aercusinstruments.com.

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