

3. Technical specifications (continuation)

3.5. Sensors

- Ultrasonic transducers (4x)
- Sample rate: 1, 4, 8 Hz
- Thermometer
- Compass
- Gyroscope
- Accelerometer

Ultrasonic Portable combine different types of sensors which allows you to get information according to your needs.

Ultrasonic transducers (4x)

The Ultrasonic Portable has been designed to avoid any mechanical parts to maximize reliability and minimize maintenance.

The transducers communicate between themselves two by two using ultrasonic range waves. Each couple of transducers calculate the signal delay and get information about both, wind direction and wind speed.



Sample rate: 1, 4, 8 Hz

Sample rate can be chosen through the application the range of data you want to extract.

If the battery level is not up to 20%, you can only get information at 1Hz.

Thermometer

Temperature data can be got using our App.

Compass

North position can be got through the needle that appears in Anemotracker App.

Gyroscope/Accelerometer

These sensors allow you to obtain information about the tilt angle of the boat.

3.6. Wind information

- Wind speed
- Wind direction

Wind speed

Range: 0 - 40 m/s

Resolution: $\pm 0,1$ m/s

Wind direction

Range: 0 - 360°

Resolution: $\pm 1^\circ$

*For more information about how to get each value, please visit our website and download latest full manual of Anemotracker App.

3.7. Protection grade ·IPX8 (10 meters)

The Ultrasonic Portable is been certified by an approved independent laboratory as IPX8. In order to get that IPX8 code certification, ULTRASONIC PORTABLE has successfully passed a 30 minutes water immersion test at a depth of 10 meters (1bar) with no water ingress. We have also run more severe tests in house with successful results (even though they are not certified).

However, reaching IPX8 30 min-10 m does not yield warranty of waterproofness at 10 m. The same rationale applies to swimming watches; a watch needs to be tested at 30-50 meters depth to be considered water-resistant at a swimming depth of around 1 meter. For going deeper than (snorkeling, diving) watches are individually tested up to 200-500 m!

Several factors might affect Ultrasonic watertightness: rubber seals and plastics wear and tear, drastic temperature changes (hot air then cold water), previous impacts, pressure increase rate (immersion velocity), water density and temperature, under-water speed and acceleration, ... This is why we do certify that our Ultrasonic is IPX8 30 min-10 m but we cannot warranty that is waterproof at 10 m.

3. Technical specifications (continuation)

3.8. Easy mount ·16 mm (M16×2 female thread)

You can mount your Ultrasonic in a simple way since it comes with a threaded lower part (16 mm M16×2 female thread).



A wide range of accessories can be used with the device

CARBON FIBER POLE

- 33 cm.
- 100 cm.
- 200 cm.



ALUMINUM POLE

- 33 cm.
- 100 cm.



(Check availability of other measures through our website).

*Please, visit our website and check accessories available and their possible combinations.

3.9. Firmware ·Upgradable

You can update the Ultrasonic Portable firmware via Bluetooth.

How can I do that?

Follow the next steps:

1. To check the availability of the new firmware version, please visit our webpage and download the file.

2. Download and install Rigado Toolbox App on your device from Google Play or Apple Store.

3. Enter to the App pressing on its icon.

4. Select the correct Ultrasonic (taking into reference the serial number/MAC address). Then the App will try to connect with the unit.

5. The connection is successful when the word "CONNECTED" appears at the top.

6. Select "FIRMWARE UPDATE" - Select first option "Firmware Image File".

7. Select the correct file ending in ".bin" (there will be a reference on the web).

8. Then, data has been updated on the main screen.

9. Select "Activation Characteristic" - A pop-up window will appear on the main screen - select it.

10. Another pop-up window will appear on the main screen - you have to search the correct one (in which the combination "0000A00A" appears) - Select it.

11. Then, data has been updated on the main screen.

12. Select "Activation Command" - The keyboard will be uncovered to indicate command "01".

13. Press "BEGIN FIRMWARE UPDATE".

14. A new window will appear with the progress.

15. When the process is completed, a pop-up window will appear indicating the completed update and requesting the Bluetooth reset.

16. Select "RESET BLUETOOTH"

17. The App directs you to the Bluetooth options. It connects again and you already have your unit updated!

If any error appears during the update process, please repeat all steps from the beginning.

*Tutorial video available at our website.

4. Functions

The Ultrasonic Portable will allow you to perform a great diversity of operations adapting to your needs.

It will provide you information about everything what is shown below through our application *Sailing Anemotracker App*, but the most important aspects that facilitate the unit are the followings:

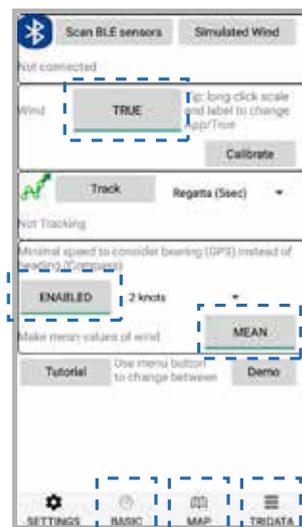
- The **Apparent Wind** is a value that comes thanks to the Ultrasonic Portable.
- The **Real Wind** is a value that facilitates the application thanks to the data collected by the anemometer and the crossing with the GPS of the connected device.
- All collected data can be stored in the memory of the application.

Below are some captures that refer to the data provided by the application.



Screen that appears when you run the application.

The menu appears at the bottom, with the four main buttons.



SETTINGS - Next screen that appears when the first one disappears.

This screen gives the option to select the type of data you want to be shown.

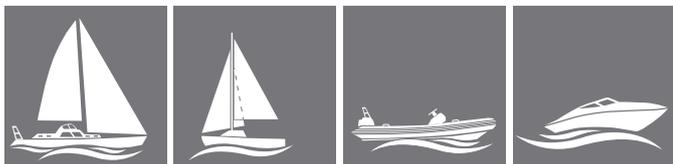


*For more information to How to use Sailing Anemotracker App, please visit our website and download its latest version of user manual.

5. Application areas

Thanks to the great diversity of functions the product can perform, it can be adapted to different areas.

Nautic



- Cruising
- Daysailers
- Trainers and race officials
- Motorboats
- Others



Extreme sports



- Kitesurf
- Kayak
- Windsurf
- Paragliding



Meteo



Industry



5. Application areas (continuation)

Energy



The Ultrasonic Portable can be used in such diverse sectors, such as agricultural or nautical, through energy or new technologies.

·Attached to any work equipment (tractor, pivot, combine harvester, ...) can facilitate information of atmospheric conditions to optimize processes and log information and position.

·Generate history for study and application on farms (reparceling, redistribution of sprinklers, claim for damages. derived from the climatic conditions, etc).

·It can be an ideal complement for eolic sector. In particular for the production of wind power. It acts as a weather station, but with the peculiarity of being mobile and of being able to obtain data in real time from a state-of-the-art device, without cables and lo them.

·To know the conditions of wind, relative humidity, temperature,... are parameters that condition certain productive processes. They can help to optimize air conditioning and humidity control in drying hams, cheeses, etc.

Knowing this information in a simple way and being able to store and treat it, can contribute to the added value of these processes and, consequently, the products resulting from the same.

·The practice of windsurfing or kitesurfing is booming. With the Ultrasonic Portable, the companies dedicated to providing services to the users of these infrastructures for the practice of these sports, could count on a Information on the weather, soxx important for the practice of these sports.

With all this, the Ultrasonic Portable becomes a multidisciplinary product, able to adapt to the needs of a wide range of users.

Agriculture



Cranes



Security



Forestry

