

User Manual



Liesenberg UG
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1. GENERAL INFORMATION

1.1. Information and Explanations for the Operating Instructions

This manual is intended to assist and familiarize you with your OpenWind device and to provide you with the information needed for its safe and proper operation. Please read the entire manual before using your OpenWind instrument for the first time.

To minimize the risk of injury and to avoid damaging the device, please do not use the OpenWind until you are sure that you have fully understood this manual. We are not liable for personal injury, property damage, damage to the device caused by improper handling or incorrect use of the OpenWind Instrument or injury resulting from failure to comply with the safety regulations contained in this manual. Please contact our support team with any questions.

1.2. Device Description

OpenWind is a wind instrument designed to measure wind direction as well as wind speed. The application uses an advanced algorithm to calculate the true wind speed and true wind direction in any environmental condition (e.g.: boat drift, current). OpenWind was designed to provide sailors with accurate and precise measurements and to be easily installed on a wide variety of vessels. Due to the innovative design of the anemometer cups, OpenWind delivers the correct wind speed, regardless of the boat heel. It also provides the sailor with information on pitch and roll as well as the compass direction. The innovative wind cup design is used under license from SailTimer Inc. www.SailTimer.co

OpenWind is powered by solar energy which charges the built-in battery. The sailor is not required to change batteries or charge the device manually. The OpenWind application is available in iOS, Android, WatchOS and AndroidWear.

1.3. Safety and Handling

1.3.1. Repair

Do not attempt to open and repair the OpenWind on your own. Disassembling the device will void the warranty and can cause permanent damage and personal injury. Contact support if your OpenWind is damaged or malfunctioning.

1.3.2. Battery

Do not attempt to replace the battery yourself. The battery can be damaged in the process which could result in overheating, fire and injury. The in-built lithium-ion battery in your OpenWind should be serviced or recycled by Liesenberg UG and must be recycled or disposed of separately from household waste.

1.3.3. Radio Frequencies

OpenWind uses wireless signals (Bluetooth 4.1 Low Energy) to connect to mobile devices or smartwatches. It was designed, tested and produced to be compliant with radio frequency emission, which complies with all regulations.



2. TECHNICAL SPECIFICATIONS

2.1. Device

Solar Panel	0.8W polycrystalline
Dimensions	200x65x70mm
Weight	280 grams
Water Resistance	up to 1 meter below surface
Connectivity	Bluetooth version 4.2
Application	IOS, Watch OS, Android, Android Wear
Operating Temperature	-20 ° to 80° C

2.2. Indicators

Wind speed units	knot, mph, km/h, m/s
Maximal wind speed	100 kts
Wind/Pitch/Roll/Compass Precision	0.1 digits
LED Blue	ready to pair
LED Green	paired
LED Red	error

2.3. Battery

Capacity	1250 mAh
Charge	Sunlight / daylight
Voltage	3.7 V
Standby mode and no sunlight	Up to 2560 hours
Normal mode and no sunlight	Up to 91 hours

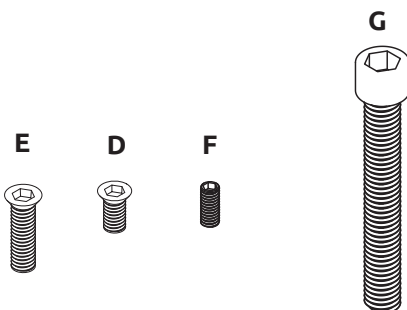
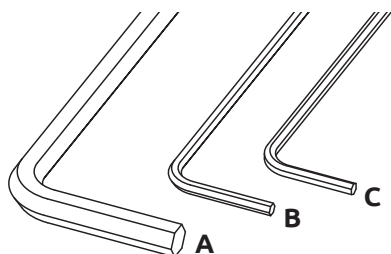
2.4. In the Box

OpenWind instrument device
Railmount
Aluminium extender
Documentation
1x hexagon socket screw key 4mm, 1x 2mm key and 1x 1,5 key
2 times M5 screw, 2 times M3x6 screw, 3 times M3x12 screw, 2 times M3x4 grub screw

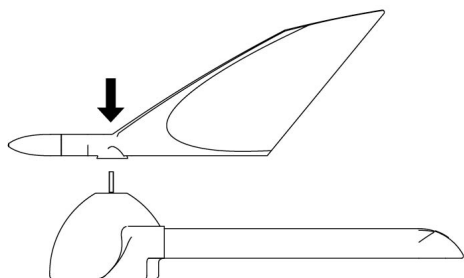


3. ASSEMBLY INSTRUCTIONS

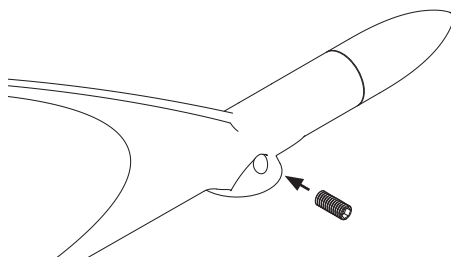
3.1. Prepare all your tools for assembly



3.2. Wind vane assembly

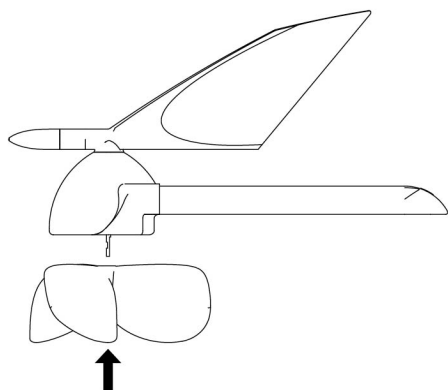


Insert the wind vane on the top of the main part of the device.

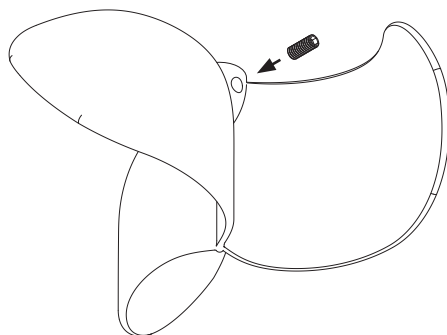


Screw (F) tightly with the help of the 1,5 mm allen key (C) provided in the box.

3.3. Anemometer assembly



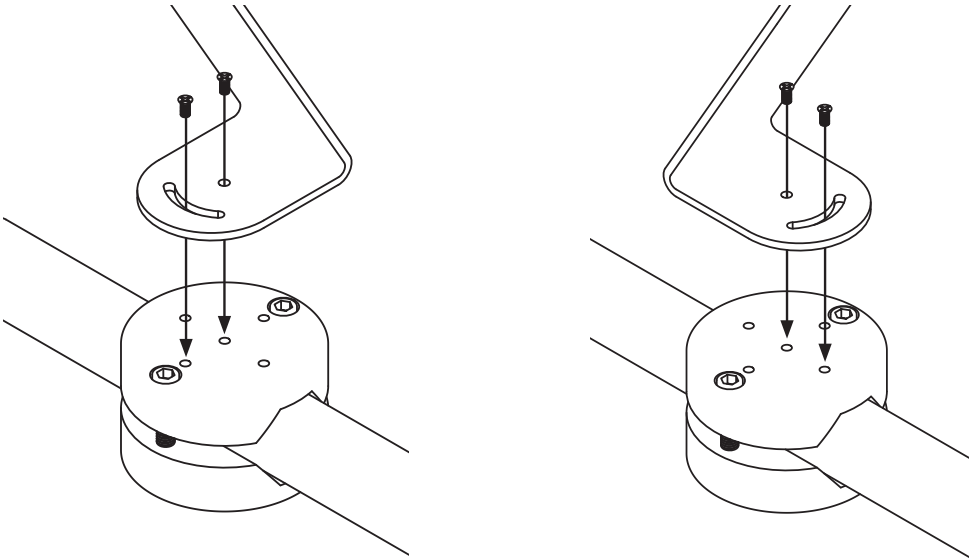
Insert the anemometer at the bottom of the main body part of the device.



Screw tightly (F) with the help of the 1,5mm allen key (C) provided in the box.

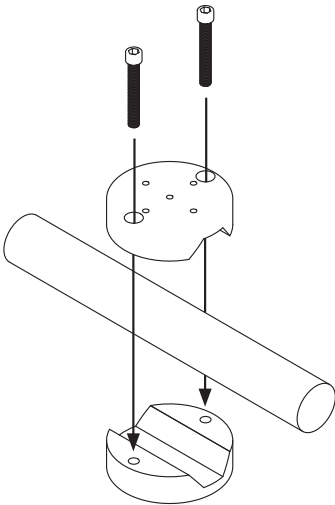


3.4. Aluminum extender assembly



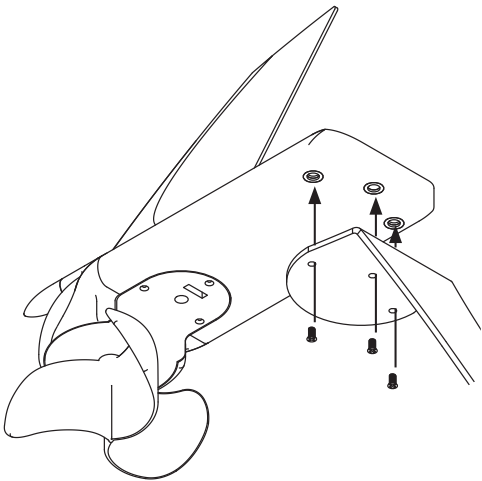
It is easier to you install the support and railmount first, and at last the OpenWind. Attach the aluminum extender according to your preferred angle, using the 2xM3-6 screws (D) and 2mm allen key (B).

3.5. Rail Mount assembly



Fix the mount to any rail of the vessel using the 2x M5 screws (G) with the help of the 4mm allen key (A).

3.6. OpenWind assembly



Fix the 3x M3-12 (E) screws to the bottom with the help of the 2mm allen key (B).



4. SOFTWARE

4.1. IOS Application

OpenWind is compatible with any IOS, WatchOS, Android and Android Wear device. To profit from all OpenWind’s features, it is recommended that your device has integrated GPS.

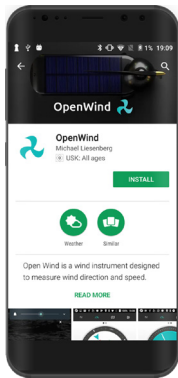
4.1.1. OpenWind Installation



- From your iPhone or iPad, go to the App Store and search for the OpenWind application.
- Download and install the OpenWind application.
- Before you launch the OpenWind application, make sure the bluetooth is enabled.
- The OpenWind application will ask for bluetooth permissions. Please accept, and it will search and connect to the OpenWind device automatically.

4.2. Android Application

4.2.1. OpenWind installation



- From your android phone, go to the Google play Store and search for the OpenWind application.
- Download and install the OpenWind application.
- Before you launch the OpenWind application, make sure the bluetooth is enabled.
- The OpenWind application will ask for bluetooth permissions. Please accept, and it will search and connect to the OpenWind device automatically.



5. APPLICATION

5.1. Connection

Once the application is launched, it will automatically search and connect to the device.

Please make sure that the device is switched on and the OpenWind application has bluetooth permission enabled. Be aware that for a successful connection you need to be within 50 meters range between the OpenWind device and your phone or tablet. To cancel the connection, you can press the "X" button on the top right corner of the screen, you will still be able to enter the App and cruise in the demo version.



5.2. Wind instrument

The wind instrument interface displays the data collected by the OpenWind device. The first screen shows wind direction and compass direction relative to the boat. The wind direction is represented by a blue arrow that moves around the boat, and the corresponding wind angle relative to the boat is displayed in the middle. The wind speed is displayed at the bottom. Both wind speed and direction can be switched between apparent and true wind angle at the bottom of the screen. The compass is represented by a dark wheel which moves relative to the vessel. Touching the Boat button displays the Course Over Ground (COG) and the Speed Over Ground (SOG) of the boat. In this setting, the compass remains fixed and the boat graphic rotates to indicate the compass course of the vessel. The blue arrow will also circle freely around the boat indicating the wind direction (true or apparent as selected).



5.3. Instrument Position

Swipe the first view to the right to display the boat position interface.

The boat roll and pitch angles are displayed with 0.1° precision.

Apparent wind speed (AWS), true wind speed (TWS) and boat speed (SOG) are still visible at the bottom and can be used simultaneously with pitch and roll.



5.4. Boat SOG and COG

- Speed over ground is the speed of the vessel in relation to the ground or an object fixed to the ground.
- Course over ground is the actual direction of progress of a vessel, between two points, in relation to the surface of the earth.

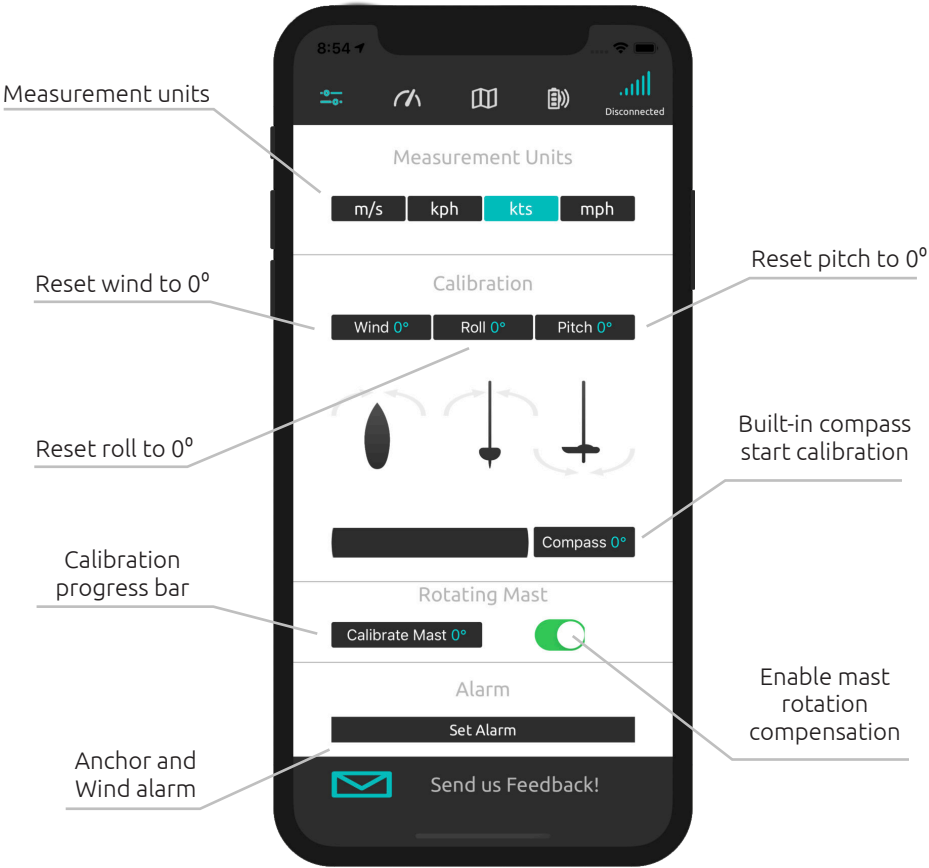
5.5. Settings

The measurement units for the wind speed (AWS/TWS) and boat speed (SOG) can be changed in the settings.

The calibration section is only needed during initial setup to store the information on the device.

- Wind 0°: set the wind direction angle to 0°
- Roll 0°: set the roll angle to 0°
- Pitch 0°: set the pitch angle to 0°
- Compass 0°: will calibrate the compass for better precision (optional)

In case of any issues or questions, please contact our support team.

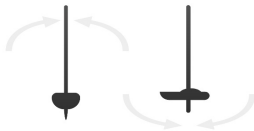


5.5.1. Wind Direction Calibration



This setting is designed to calibrate the 0° wind position to the front of the boat. To calibrate, manoeuvre the bow directly into the wind, and press the “Wind 0°” button to set the 0° position.

5.5.2. Pitch and Roll Calibration



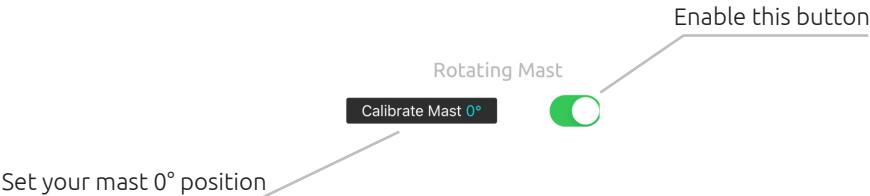
This setting is designed to calibrate the 0° Roll and 0° Pitch position of the boat. To calibrate, avoid areas with waves and try to balance the boat keeping it as still and upright as possible. Make sure the OpenWind device is also aligned with the boat. Press the “Roll 0°” to set the roll position to 0°. Press the “Pitch 0°” button to set the pitch position to 0°.

5.5.3. Rotating Mast

The OpenWind application can compensate mast rotation. It calculates the offset between the in-built compass of the OpenWind device and the compass of the phone or tablet.

In order to work, the phone’s compass will be the reference for the boat’s heading. The phone has to be mounted on the boat and aligned with the boat’s heading.

To activate mast rotation compensation, follow these simple steps:

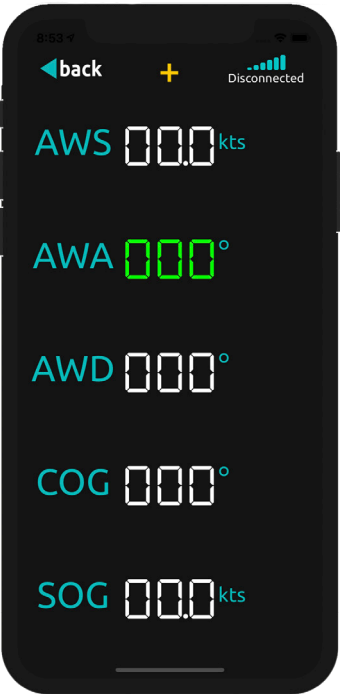


5.5.4. All tab

All the calculations done by OpenWind and the Application can be found and customized under the ALL tab on the bottom right corner.

Pressing the yellow + sign on the top of the page will open the customization tab.

The “back” button will send you back to the wind interface.



Here you can enable and disable the data you wish to see in the “All” tab.

At the bottom of the page, you will find a filter for the wind direction. This filter can ease the movement of the arrow in the wind interface and also the constant changing of numbers in the “All” tab.

Pressing the “back” button will send you back to the “All” tab.

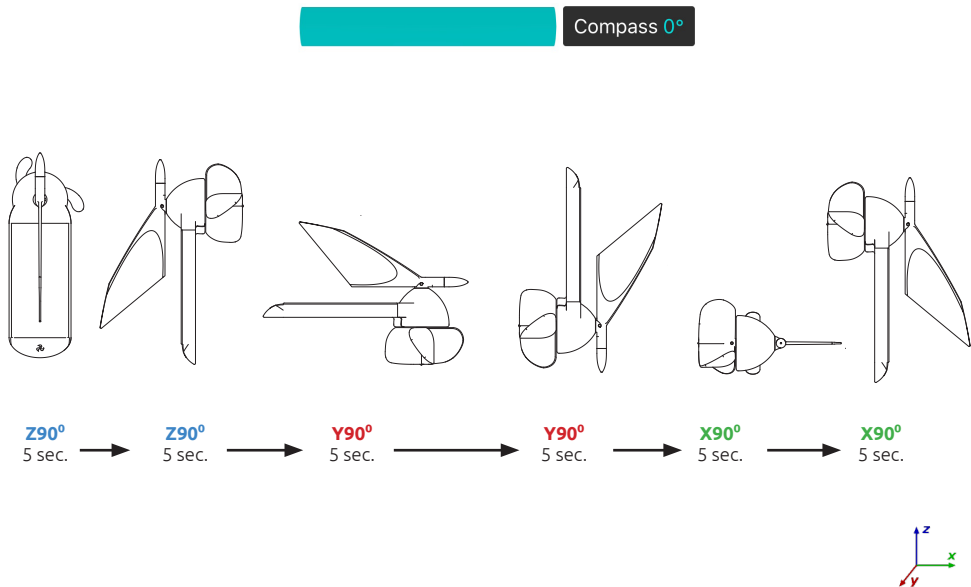


5.5.5. Compass Calibration

The compass sensor used here is the BOSCH BNO055, a smart sensor combining accelerometer, gyroscope, magnetometer and orientation software.

The compass calibration is not mandatory, as the OpenWind device is already calibrated in the manufacturing process. Built-in compass calibration will only improve the compass orientation according to the magnetic variation for the latitude in your location. Over time, the swing of the boat also helps the sensor to calibrate on its own.

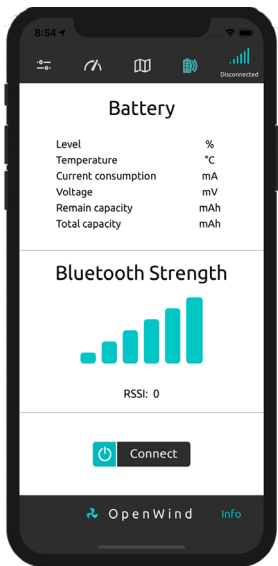
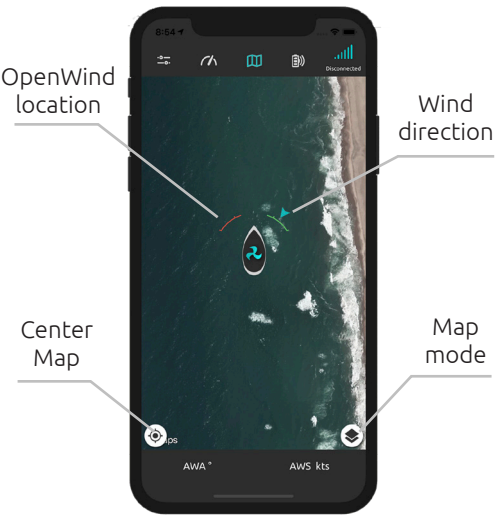
If you wish to calibrate, detach the OpenWind instrument from the aluminum or carbon extender and prepare a flat surface. Make sure the instrument is connected before calibration. After pressing the calibration button, turn the device **90°** around in **2 different positions on each of the 3 axis (x,y,z)** as illustrated bellow. Please hold each position for around **5 seconds** and keep changing the position until the progress bar is completed. This process may take from 2 to 10 minutes.



5.6. Map

In order to use the map the user must have mobile coverage.

The data information displayed at the bottom is the one selected on the Wind instrument Interface, in this case, AWA and AWS.



5.7. Connectivity

The device battery information is displayed on the connectivity page. The battery data will be updated every second. The bluetooth strength is measured in RSSI and the bluetooth range is 50 meters.

Positive values in the consumption indicate that the device is charging with solar energy, and negative values indicate that the device is consuming the battery.



5.8. iWatch Application



5.8.1. Connectivity

The OpenWind application on the iWatch runs independently from the iPhone. To connect to the OpenWind device, please press “Connect” button on the first page. Bluetooth strength is displayed in RSSI and the range is 50 meters.



5.8.2. Instrument Wind

The second page displays the wind direction in degrees and wind speed in kts.



5.8.3. Instrument Position

The third page displays the pitch and roll angle in degrees.



5.8.4. Instrument Compass

The fourth page displays the boat direction in degrees (COG) and boat speed in knots (SOG).

- COG - Course Over Ground
- SOG - Speed Over Ground



5.8.5. Battery

The last page displays all the battery information. The data is updated every second.



5.9. Android Wear Application



5.9.1. Connectivity

The OpenWind application in the Android Wear runs independently from the Android Phone. To connect to the OpenWind device, please press the "Connect" button. Bluetooth strength is displayed in RSSI and the range is 50 meters.



5.9.2. Menu

You can use the menu to change the application pages:

- Connectivity
- Wind Data
- Boat Data
- Battery Information
- Settings



5.9.3. Wind

The wind direction and wind speed data are updated every second. The compass will also be displayed and rotated on the screen.





5.9.4. Position

The boat pitch and roll angles are shown in degrees with 0.1° precision.



5.9.5. Settings

The wind speed unit can be set in knots, mph, kph or m/s.



5.9.6. Battery

The battery information is updated every second.



1.1. Galaxy Watch Application



1.1.1. Connectivity

The OpenWind application in the Galaxy Watch Application runs independently from the smartphone. To connect to the OpenWind device, make sure bluetooth is turned on and press the "Connect" button. Bluetooth strength is displayed in RSSI and the range is 50 meters.



1.1.2. Menu

You can use the menu to change the application pages:

- Connectivity
- Wind Data
- Boat Data
- Battery Information
- Settings



1.1.3. Wind

The wind direction and wind speed data are updated every second. The compass will also be displayed and rotated on the screen.





1.1.4. Position

The boat pitch and roll angles are shown in degrees with 0.1° precision.



1.1.5. Settings

The wind speed unit can be set in knots, mph, kph or m/s.



1.1.6. Battery

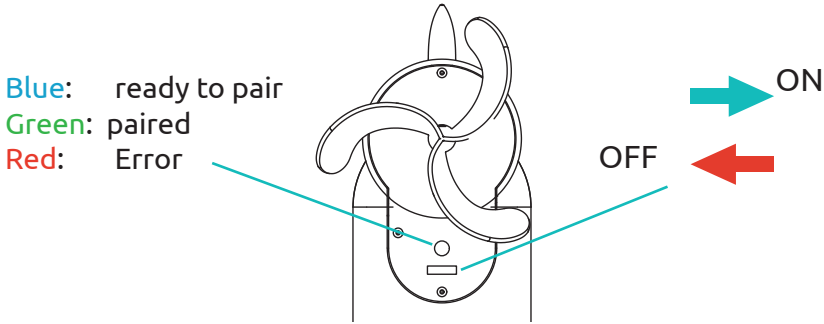
The battery information is updated every second.



6. TROUBLESHOOTING

6.1. Connection

The windmeter is designed to never run out of battery, so there is no need to turn it back off if you leave it outside where it can get sunlight.



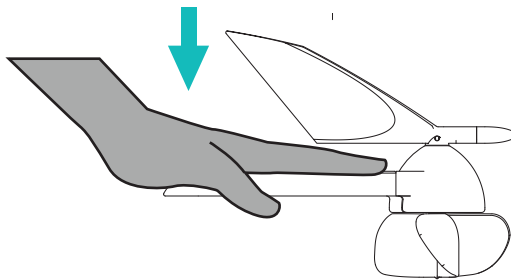
6.1.1. If the OpenWind application does not find the device:

Make sure you turn the power switch on and the OpenWind instrument is flashing the blue LED every 10 seconds.

Make sure bluetooth is enabled on your mobile or smartwatch device.

Close the application, and switch bluetooth off and then back on, then restart the application.

If none of the instructions above work, cover the Solar panel with your hand, switch it OFF and then back ON again.



6.1.2. If the OpenWind device does not flash any light after turning the power switch on:

If your device has been left off for a long period away from a light source, leave it charging in the sun for 1/2 hour or until there is enough power to start the device again. You can check the battery status through your OpenWind App. If this doesn't work, please contact support.



7. TRANSPORTATION AND PACKAGING

7.1. Transportation

Please make sure that the OpenWind instrument is not subjected to impact during transport. This can damage the device. If necessary, transport the device in the original box or in a suitable container.

7.2. Packaging

If you do not wish to keep the original OpenWind packing material, please dispose of it according to the disposal requirements in your community for proper disposal and recycling.

8. MANUFACTURER WARRANTY

8.1. What is covered by this warranty

Liesenberg UG, Münsing, Bavaria, Germany warrants the OpenWind hardware product contained in the original packaging against defects in materials and workmanship when used normally in accordance with Liesenberg UG's published guidelines for a period of two (2) years from the date of original retail purchase by the end-user purchaser ("Warranty Period").

8.2. What is not covered by this warranty

This Warranty does not apply to any non-Liesenberg UG branded hardware products or any software, even if packaged or sold with Liesenberg hardware. Manufacturers, suppliers or publishers, other than Liesenberg UG, may provide their own warranties to you – please contact them for further information. Liesenberg UG does not warrant that the operation of the Liesenberg UG's Product will be uninterrupted or error-free. Liesenberg UG is not responsible for damage arising from failure to follow instructions relating to the Liesenberg UG Product use.

8.2.1. This Warranty does not apply:

(a) to consumable parts, such as batteries or protective coatings that are designed to diminish over time, unless failure has occurred due to a defect in materials or workmanship; (b) to cosmetic damage, including but not limited to scratches, dents and broken plastic on ports unless failure has occurred due to a defect in materials or workmanship; (c) to damage caused by use with a third party component or product that does not meet the Liesenberg UG Product's specifications; (d) to damage caused by accident, abuse, misuse, fire, liquid contact, earthquake or other external cause; (e) to damage caused by operating the Liesenberg UG's Product outside Liesenberg UG's published guidelines; (f) to damage caused by service (including upgrades and expansions) performed by anyone who is not a representative of Liesenberg UG;



(g) to an Liesenberg UG's Product that has been modified to alter functionality or capability without the written permission of Liesenberg UG; (h) to defects caused by normal wear and tear or otherwise due to the normal aging of the Liesenberg UG Product; (i) if any serial number has been removed or defaced from the Liesenberg UG Product; or (j) if Liesenberg UG receives information from relevant public authorities that the product has been stolen and you cannot prove in any way that you are the authorized user of the product (eg. by presenting proof of purchase).

8.3. What will Liesenberg UG do in the event the warranty is breached

If during the Warranty Period you submit a claim to Liesenberg UG in accordance with this warranty, Liesenberg UG will, at its option:

(i) repair the Liesenberg UG Product using new or previously used parts that are equivalent to new in performance and reliability, (ii) replace the Liesenberg UG Product with the same model (or with your consent a product that has similar functionality) formed from new and/or previously used parts that are equivalent to new in performance and reliability, or (iii) exchange the Liesenberg UG Product for a refund of your purchase price. Liesenberg UG may request that you replace certain user-installable parts. A replacement part or Liesenberg UG' Product, including a user-installable part that has been installed in accordance with instructions provided by Liesenberg UG, assumes the remaining term of the Warranty or ninety (90) days from the date of replacement or repair, whichever provides longer coverage for you. When an Liesenberg UG's Product or part is replaced or a refund provided, any replacement item becomes your property and the replaced or refunded item becomes Liesenberg UG's property.

8.4. Limitation of liability

Except as provided in this warranty and to the maximum extent permitted by law, liesenberg ug is not responsible for direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory, including but not limited to loss of use; loss of revenue; loss of actual or anticipated profits (including loss of profits on contracts); loss of the use of money; loss of anticipated savings; loss of business; loss of opportunity; loss of goodwill; loss of reputation; loss of, damage to, compromise or corruption of data; or any indirect or consequential loss or damage howsoever caused including the replacement of equipment and property, any costs of recovering, programming, or used with the liesenberg ug's product or any failure to maintain the confidentiality of information stored on the liesenberg ug's product.

The foregoing limitation shall not apply to death or personal injury claims, or any statutory liability for intentional and gross negligent acts and/or omissions. Liesenberg ug disclaims any representation that it will be able to repair any liesenberg ug's product under this warranty or replace the liesenberg ug's product without risk to or loss of information stored in the liesenberg ug's product.



9. REGULATORY

9.1. EU Compliance Statement



Liesenberg UG declares that this wireless device is in compliance with the essential requirements, Radio Equipment Directive 2014/53/EU and Electromagnetic Compatibility 2014/30/EU as applicable.

9.2. European Union—Disposal Information



The symbol above means that according to local laws and regulations your product and/ or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product and/or its battery at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

10. SAFETY

10.1. Software safety

If in any case the OpenWind Instrument firmware encounters in a persistent issue on standby or in normal operation, it will automatically reset and boot itself.

This extra feature increases the device stability and makes it tougher for every environment or in any stress conditions. If this feature failed to work, the switch button located at the bottom of the device, could be use to manually reboot the system.

10.2. Hardware safety

OpenWind has an independent battery management system from the firmware that monitors the Lithium Ion battery to prevent over and under charging. If in any case the battery reaches a critical state, the device reverts to low power mode. It will then return to standby mode, once the battery leaves its critical state. This safety feature increases battery life and avoids battery damage. All assembly parts in the OpenWind instrument, are stainless steel or corrosion free to make it more durable in harsh environments.

To avoid injury during installation or maintenance, all edges of OpenWind were designed to be smoother and rounded.



11. EG DECLARATION OF CONFORMITY

EG Declaration of Conformity

Manufacturer: Liesenberg UG
Adresse: St. Heinricher Straße 9, 82541 Münsing, Germany
Product name: OpenWind

We declare under our sole responsibility that the above referenced product complies with the following:

Electromagnetic Compatibility 2014/30/EU
Radio Equipment Directive 2014/53/EU
Restriction of certain Hazardous Substances 2011/65/EU
Low Voltage 2014/35/EU

The following standards have been applied:


EN 61326-1:2013 Electromagnetic compatibility (EMC) - Generic
EN 301-489-1 V2.1.1 standards - Emission standard for residential,
EN 301-489-17 V3.1.1 commercial and light-industrial environments.

EN 62368-1:2016-05 Audio/video, information and communication
technology equipment Part 1: Safety requirements.

Münsing, May 15, 2020



Michael Liesenberg
Head of Engineer



Matthias Liesenberg
Head of Visual Development

