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Feb 2024

Anemometer Sensor

Product Number: ENAMN012A

Overview

A critical part of studying weather is measuring wind direction and speed. The Anemometer is actually two sensors mounted onto one arm, capable of measuring wind speed and wind direction. The wind caps are used to measure wind speed and the wind vane measures the wind direction.

The Anemometer is meant to be used in various experiments in Climatology and Environmental Studies. The sensor can be connected to all einstein™ data loggers.

Environmental Science

- Measuring wind speed and direction
- Collecting weather data over an extended duration outside the classroom

How it works

Wind Direction:

The wind vane is mounted on a potentiometer. The output voltage of the potentiometer changes as the direction of the vane changes.

Wind Speed:

The wind cups catch the wind which causes them to spin. A small magnet is attached to the cups' hub. This magnet produces a pulse with every rotation. The data logger counts the pulses and then calculates the wind velocity.

Sensor specification

Wind Speed

Range:	1 to 200 mph, 1 to 173 knots, 0.5 to 89 m/s, 1 to 322 km/h
Accuracy	±5%
Recommended Sampling Rate	1 sample per second*

* The maximum Sampling Rate is one sample per second

Wind Direction

Range:	0° - 360°
Accuracy	±7%
Resolution (12-bit):	±1°
Recommended Sampling Rate	1 sample per second*

* The maximum Sampling Rate is one sample per second

What's included

Anemomter

Note: Sensor cables sold separately

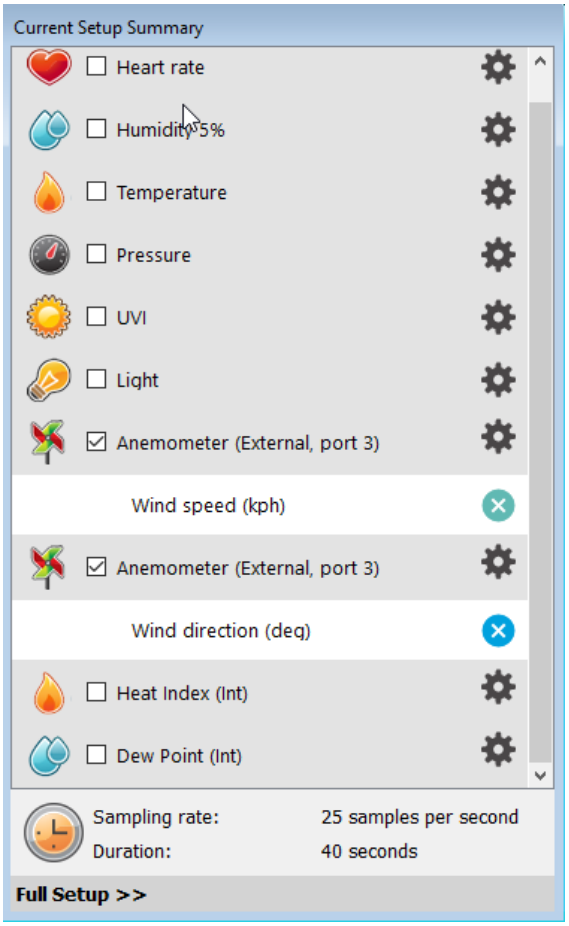
Data logging and Analysis

MiLABEx™

Desktop

1. Connect your einstein™ LabMate™ to your PC with cable or pair it with Bluetooth
2. Insert the electrode into the ISE amplifier

3. Insert the ISE amplifier cable into one of the sensor ports
4. Launch MiLABEx
5. MiLABEx will automatically detect the ISE amplifier and show it in the **Current Setup Summary** window



Calibration

Calibrating the sensor

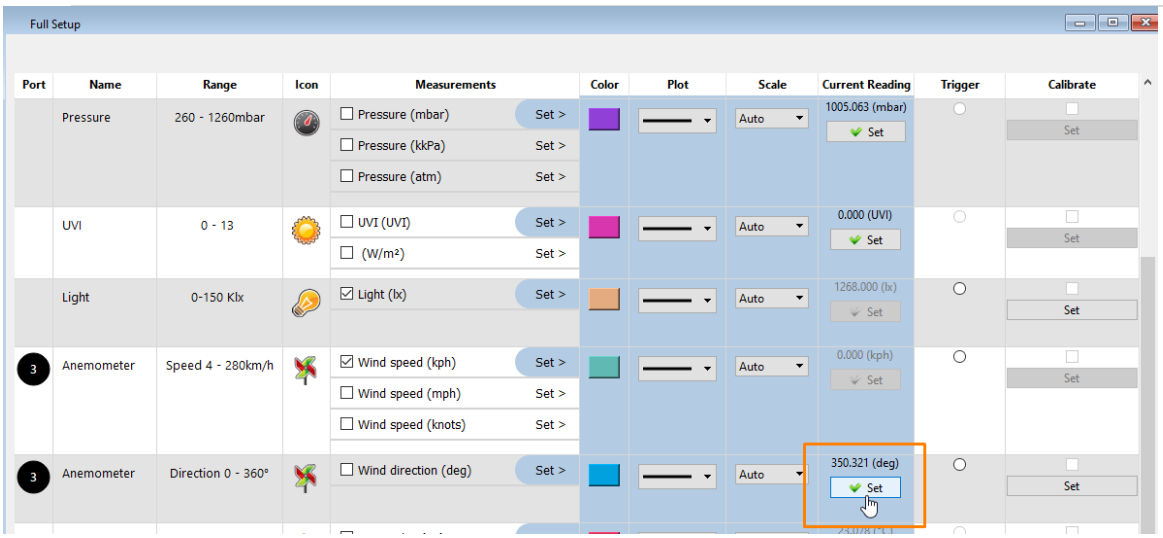
The wind speed function is fully calibrated, no further calibration is needed.

The wind Direction function can be calibrated as follows:

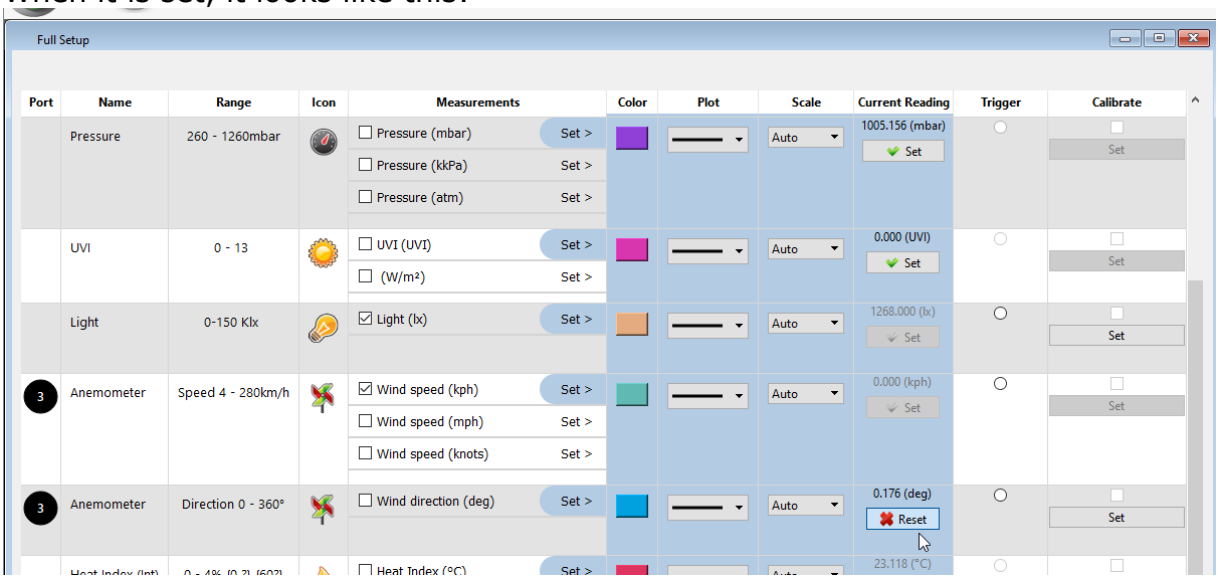
Desktop

Set Zero Calibration

1. Go to Settings
2. Flip the Set as Zero switch to set the current value as the zero or base value.

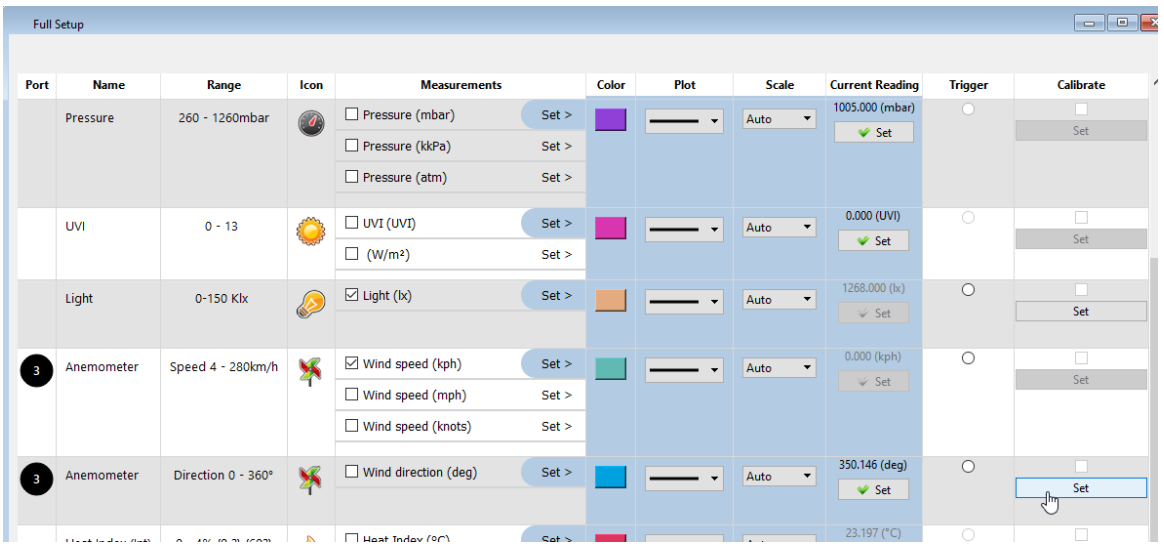


When it is set, it looks like this:



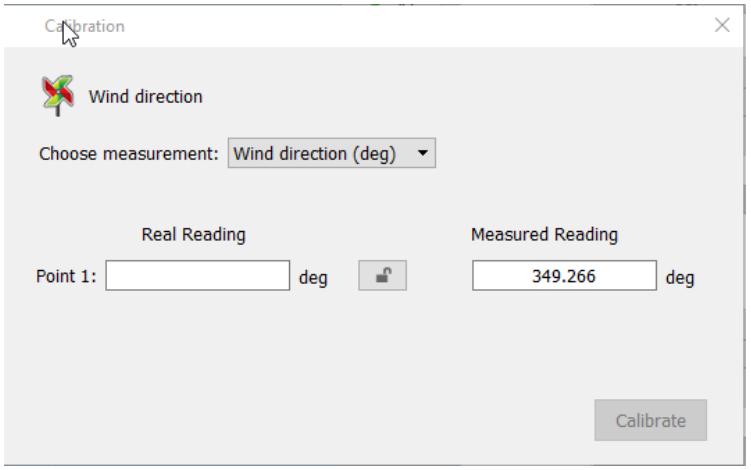
One Point Calibration

1. Go to settings

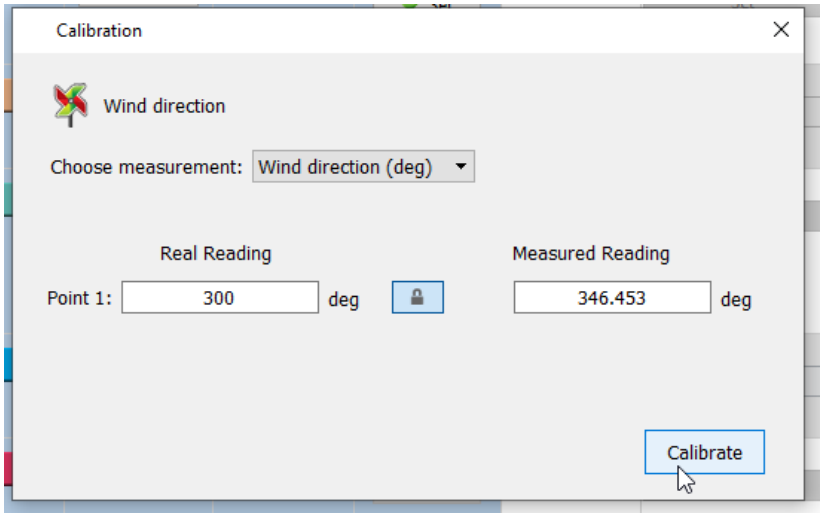


2. Click on Set

Insert the reading for calibration



3. Click the lock button

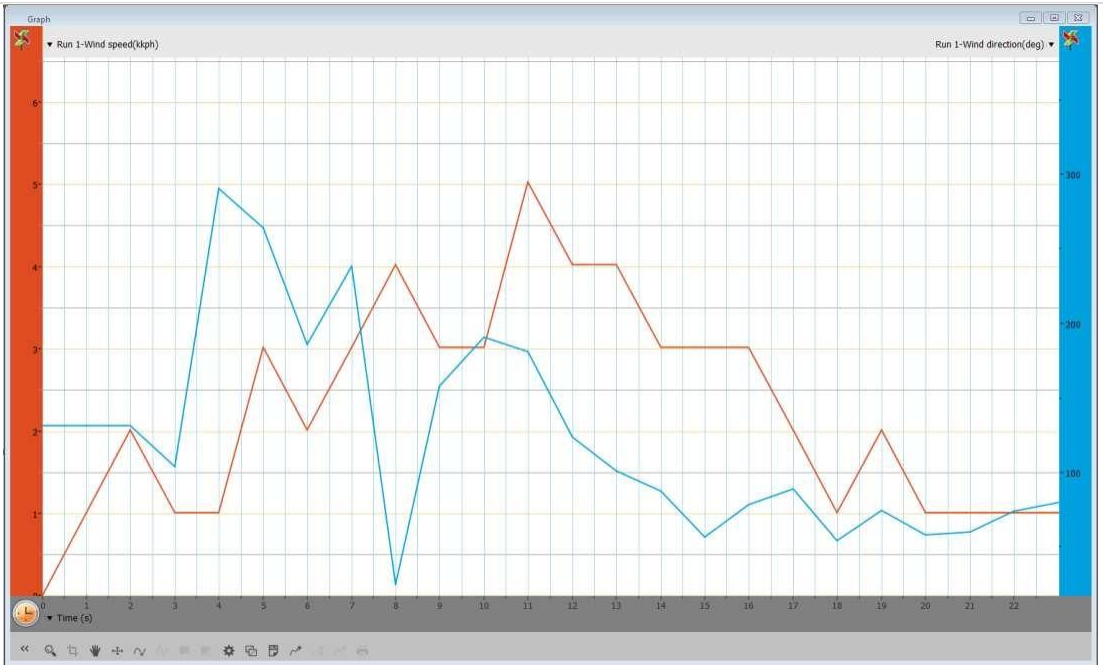


4. And than Click Calibrate

An example of using the Anemometer Sensor

Using a Fan as a Wind Source

1. Place the sensor in front of the fan.
2. Click the Run button to start logging.
3. Change the position of the sensor and see how it affects the wind speed and direction measurements.



4. Click the Stop button

Technical support

For technical support, you can contact the Fourier Education's technical support team at: Web: www.einsteinworld.com/support
Email: support@fourieredu.com

Copyright and Warranty

All standard Fourier Systems sensors carry a one (1) year warranty, which states that for a period of twelve months after the date of delivery to you, it will be substantially free from significant defects in materials and workmanship.
This warranty does not cover breakage of the product caused by misuse or abuse.
This warranty does not cover Fourier Systems consumables such as electrodes, batteries, EKG stickers, cuvettes and storage solutions or buffers.