

Anemometer (Wind Speed and Wind Direction)

AC012A



The Anemometer is a sensor that can be connected to the Nova5000, MultiLogPRO or TriLink data loggers.

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 range of the Wind Speed sensor is 4 km/h to 280 km/h (2.5 mph to 174 mph).

The range of the Wind Direction sensor is 0° to 360°.

The Anemometer is meant to be used in various experiments in Climatology and Environmental Studies.

Only one cable connects the Anemometer to the data logger.

Typical Uses

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

How it Works

Wind Direction measurement:

The wind vane is mounted on a potentiometer that can revolve indefinitely resulting in an output voltage that corresponds to the vane direction.

Wind Speed measurement:

The wind cups spin with the wind. A small magnet is attached to the cups' axis and produces a pulse with every rotation. The data logger counts the pulses and then calculates the wind velocity.



Sensor Specification for Wind Speed Sensor

Range:	4 km/h to 280 km/h 2.5 mph to 174 mph
Resolution:	0.1 km/h
Accuracy:	± 5%
Sampling Rate:	Up to one sample per second
Data Logger Input Type:	Digital

Sensor Specification for Wind Direction Sensor

Range:	0° - 360°
Resolution:	± 0.09°
Accuracy:	± 7°
Sampling Rate:	Up to one sample per second
Data Logger Input Type:	Digital

Technical Notes

- The data logger must be in *8-Inputs* mode when using the Anemometer
- The Anemometer always has to be used with one splitter cable
- The sampling rate is no more than one sample per second
- The Anemometer sensor must be connected to the data logger's digital inputs. For the MultiLogPRO or TriLink these are the first two inputs, and for the Nova5000 all inputs are digital.

Equipment List for the Anemometer (AC012A)

Mini-din Socket	10242
Wind Direction/Wind Speed sensor	AC012
Splitter cable	DT011

Calibration

The Anemometer ships fully calibrated. No further calibration is needed.



Using the Anemometer Sensor with the Nova5000 and MultiLab Software

1. Launch the MultiLab CE software.
2. Connect a Splitter cable to the Anemometer sensor.
3. Connect the Splitter cable output marked with $\uparrow\downarrow$ to the Nova5000's sensor inputs I/O-1.
4. Connect the second Splitter cable output, marked with **S** to the Nova5000's sensor inputs I/O-2.
5. Click **Setup** on the main toolbar.
6. Uncheck the **Auto Detect Sensors** checkbox.
7. Select the Wind Speed sensor from the drop-down menu next to I/O-1.
8. Select the Wind Direction sensor from the drop-down menu next to I/O-2.
9. Click the **Rate** tab and select the data logger's sampling rate.
10. Click the **Sample** tab and select the number of samples to be collected.
11. Click **OK**.
12. Click **Run** on the main toolbar to start the measurement.

Using the Anemometer Sensor with the MultiLogPRO or TriLink and MultiLab Software

1. If using the MultiLogPRO, set the data logger to *8-Inputs* mode.
2. Launch the MultiLab PC software.
3. Connect a Splitter cable to the Anemometer sensor.
4. Connect the Splitter cable output marked with $\uparrow\downarrow$ to the MultiLogPRO or TriLink sensor inputs I/O-1.
5. Connect the second Splitter cable output, marked with **S** to the MultiLogPRO or TriLink sensor inputs I/O-2.
6. Click **Setup Wizard** on the main MultiLab toolbar.
7. Select the Wind Speed sensor from the drop-down menu next to I/O-1.
8. Select the Wind Direction sensor from the drop-down menu next to I/O-2.
9. Click **Setup** on the main toolbar and program the data logger's sample rate and select the number of samples. Click **Run** on the main toolbar to start the measurement.



Technical Support

Please contact Fourier technical support as follows:

Web: http://www.fourier-sys.com/support_support.html

Email: support@fourier-sys.com

Consult the FAQs before contacting technical support:

http://www.fourier-sys.com/support_faq.html

Copyright and Warranty

All standard Fourier Systems sensors carry a one-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.