

Kanomax Anemometer Selection Guide



KANOMAX
The Ultimate Measurements

Application Note

Kanomax offer several types of anemometers

There are many types of anemometers on the market, each offering its own advantages for certain types of measurements. Common varieties include Cup, Vane, Hot-wire, Laser Doppler and Sonic anemometers. For the purpose of this article we will just look at hot-wire and vane types, both of which are available through Kanomax.

Measuring airflow isn't difficult, but there are several factors that can affect the results of a measurement. These main factors are temperature, pressure and turbulence. It's also worth thinking about where the measurement will be taken as measuring in a duct is different than measuring in a wind tunnel which is different than measuring the flow of air over a circuit board. These factors are going to dictate what anemometers will work for a specific application. An additional factor to consider is if we need, or want, to measure additional parameters (such as temperature and humidity) at the same time. We'll examine these factors more as we look at the types of available anemometer.

First we'll examine handheld anemometers. These units are designed to be small and compact so they're easy to transport and handle for a single technician. Kanomax offers a wide-range of handhelds to meet nearly any price point or application.

1) **Anemomaster Lite** – This is a basic, entry-level hot-wire anemometer. The unit measures both airflow and temperature. It fits in the palm on your hand and is operated by a single thumbswitch on the side of the unit. With a 5% m.v. accuracy rating it beats most competitor units on the market at this price point and is a durable, reliable instrument for a contractor on a tight budget. However, it lacks the more advanced capabilities, such as datalogging, of the other handhelds we'll examine.



*Anemomaster Lite
Model 6006*

*Anemomaster
Professional
Model 6036*

2) The Anemomaste Professional is a great choice for most HVAC applications. Its accuracy rating is 3% m.v. which is equal to our competitor's high-end units. The unit comes standard with datalogging for 1500 records, PC software so you can download and analyze data on a PC or prepare a report for a client, and an articulating telescopic probe that makes it easy to measure at the proper 90 degree angle even for those tricky ceiling ducts. The unit can also be programmed with several duct sizes and shapes (square, rectangular or round) and then give you volumetric flow rates for those ducts. The unit can be ordered with an optional sensor to measure pressure and analog output option.

3) **Climomaster** – The Climomaster is a research-grade level 2% m.v. accuracy hot-wire anemometer, making it the most accurate hot-wire in the world. It offers a ton of flexibility and options. There are 8 different probes available for it: these probes are all interchangeable and can be used with a single main unit without any additional calibration. Some



*Climomaster
Model 6501*

of the probes can measure temperature and/or humidity along with air flow. Other probes are designed for use in turbulent or high velocity airflows and some are miniaturized for use in really tight spaces like those encountered when checking the cooling profile of a circuit board. The unit comes standard with 20,000 record advanced datalogging capability. Climomaster can also be ordered with a pressure sensor and analog output if desired. Many additional accessories such as software, extension rods, hands-free case and special cable lengths are also available. Special Note: We just upgraded this unit and the Anemomaster Professional with an automatic barometric pressure compensation feature. As of May 1st all units come standard with this feature which helps maintain their excellent accuracy rating even in extreme altitudes.



*Anemomaster Vane
Models 6812, 6813, 6815*

4) Anemomaster Vane Anemometer – Our final handheld unit is a vane anemometer that features a 1% m.v. accuracy rating. Vane anemometers are very good for measuring face velocities because of the larger vane head and because they directly measure

volumetric flow rather than velocity. We have 3 versions available, the basic model 6812 which just measures airflow, the 6813 which measures airflow and temperature and the 6815 which measures airflow, temperature and humidity. There are a couple things to keep in mind before purchasing one of these units though: because of the bearing friction vanes cannot accurately measure airflow slower than 40 ft per minute and the size of the vane head can be an issue if you're measuring inside a duct or other narrow spaces.

In addition to handheld units, Kanomax also offers a couple types of specialized anemometers for unusual applications. These include high temperature units as well as multi-channel units that allow you to simultaneously measure airflow at several points.



*High Temperature Anemometer
Model 6162*

Model 6162 is designed to measure airflow in chimney stacks, kilns, drying ovens and other high temperature areas. Depending on your choice of probes the unit can measure airflow in temperatures up to 752°F. There are 3 probes available, a mid-temperature probe that can handle temperatures up to 392°F and 2 probes (a long one and a shorter one) that will go up to 752°F. The full specifications for all the probes and the main unit are available on our website. When ordering these keep in mind you need to buy the main unit, a probe and a cable to connect the two.

The final type of anemometer we'll look at are the multi-channel units. These units are designed to simultaneously measure airflow at several different points. Typical applications include aerodynamic studies, production control (for quality or automation) and studies of cooling



4-Channel Anemometer
Model 1570

Multi-Channel Anemometers
Models 1550 & 1560

efficiency of electronic components. Our basic unit is the 1570. It can measure airflow at 4 different points simultaneously. The unit can only display one channel at a time on its display, but with the included PC software it can monitor all 4-channels in real-time. When you order it you need to buy the main unit, probes and cables to have a complete system. Models 1550 and 1560 are more advanced and can be customized to your specific applications. These units have the capability to also measure temperature and humidity (depending on probe choice). In addition to purchasing the unit probes and cables you also need to buy the interface cards

that go into the main unit. We strongly suggest calling us to discuss your specific application so we help you assemble a system that will work for you. A big advantage of these units is the ability to customize both the size of the system (up to a maximum of 320 sensors) and the types of probes you can use. The modular nature of these systems is designed so you can get exactly what you need without having to buy extra components, but they also allow future expandability (similar to a PC).

We hope you found this guide to our anemometers helpful. Kanomax has been manufacturing anemometers and other high-quality instruments for over 60 years. Our dedicated team is happy to help you with any product or application questions you may have. We also offer other airflow solutions such as airflow capture hoods, micromanometers and pitot tubes. You can check them out on our website www.kanomax-usa.com along with our other solutions such as particle counters, indoor air quality monitors and industrial hygiene products.

Quick Comparison Table

Model	m/s	°C	%RH	kPa	Smart Probe	Batter-ies	AC Power	Data-logging	Inter- face	Analog Output	Soft- ware
6006	0.1 to 20.0	-20 to 70	-	-	o	o	-	-	-	-	-
6036	0.1 to 30.0	-20 to 70	-	*	o	o	o	o	USB	*	o
6501	0.05 to 50.0	-20 to 70	2 to 98	*	o	o	o	o	USB	*	o
6812	0.2 to 40.0	-	-	-	-	o	-	-	*	*	x
6813	0.2 to 40.0	-95 to 200	-	-	-	o	-	-	*	*	x
6815	0.2 to 40.0	-95 to 200	5 to 95	-	-	o	-	-	*	*	x
6162	0.2 to 50.0	0 to 500	-	-	o	o	o	o	RS232	o	o
1570	0.1 to 50.0	-	-	-	o	-	o	o	RS232	o	o
1560	0.1 to 50.0	0 to 100	5 to 95	-	o	-	o	o	RS232	*	o
1550	0.1 to 50.0	0 to 100	5 to 95	-	o	-	o	o	RS232	*	o

* = Option

x = works w/Windows Hyper Terminal

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