



CAMBRIDGE ACCU**SENSE**, INC.

Quattro Flow

Air Velocity Analyzers

Mobile Multipoint Evaluation



*Four sensor ports
allow designers
and certifiers
to obtain real-
time, multipoint
snapshots of
the airflow
environment.*



The Cambridge AccuSense Quattro Flow Velocity Analyzer is a mobile unit designed for accurate, cost-effective multipoint evaluation. Portable and self-contained, the Quattro Flow is powered by internal rechargeable batteries that allow for up to eight hours of continuous use. The full package consists of a lightweight measurement instrument with four sensor ports, a choice of low-profile or clip-on ruggedized AFS airflow sensors and optional printer.

Whether used alone or in conjunction with Cambridge AccuSense AccuTrac Software, the Quattro Flow provides a reliable, efficient answer to the needs of thermal designers, certifiers and field support personnel.

AFS Series of Air Velocity Sensors

Features

- Interchangeable
- Rugged construction
- Reliable
- Low intrusion
- Individually calibrated
- Choice of sensor packages

Low-profile, minimized AFS sensors are easily mounted on a PC board to validate thermal design and performance.



The Cambridge AccuSense AFS series are thermistor-based, interchangeable sensors, designed to address the weakness of traditional single-point probes. On-line circuitry normalizes the performance of each sensor, providing a unique advantage — in the event a sensor ever needs to be removed, another sensor can be immediately plugged in, and measurements can continue without any field calibration.

The solid-state construction of these glass-encapsulated sensors assures ruggedness and reliability at all times, making the AFS resistant to the rigors of laboratory or field use without loss of accuracy. A low-profile probe design causes minimal distortion of the true air velocity picture, while allowing access to hard-to-reach locations, including printed circuit boards inside electronic enclosures.

AFS package choices include clip-on sensors that can be attached to an optional grid or affixed at intervals to a wand for efficient measurement of airflow in fume hoods or safety cabinets. Also available are smaller probes — such as printed circuit boards — to provide air velocity and air temperature data.



Clip-on AFS sensors can be attached to an optional wand for hand-held operation.



Quattro Flow

Quattro Flow Versatility

The Cambridge AccuSense Quattro Flow is a powerful, complete, yet cost-efficient air velocity and air temperature instrument. Its portability allows the user to perform real-time data collection and analysis at the lab or in the field, and to complete measurements in a fraction of the time it would take with conventional, single-point measurement technology.

The highly efficient Quattro Flow features the proven accuracy, reliability and versatility characteristics of all the Cambridge AccuSense line of airflow analysis technology, and makes it available for a low investment. Applications ranging from electronics cooling design, cleanroom, fume hood and safety cabinet design and testing to HVAC room balancing and duct testing can benefit from this technology.

Unlike most anemometers, which will "under-read" at higher elevations, the Quattro Flow is density-compensated and provides a TRUE air velocity reading, corrected for altitudes up to 10,000 feet. The Quattro Flow is compatible with AccuTrac, the Windows™-based software for thermal design and validation developed by Cambridge AccuSense. Air velocity and air

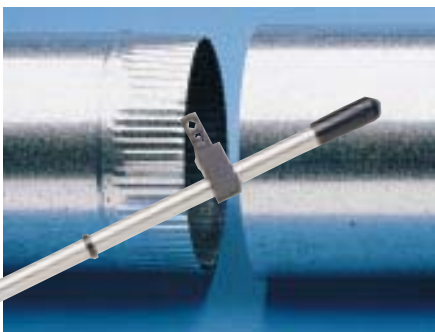
temperature data collected by the Quattro Flow can be displayed, saved, reviewed, graphed and printed without having to export the information to another program. Frequent returns and field re-calibration are avoided, since the user can easily verify the operation and accuracy of any one AFS sensor and its channel by checking it against the other three sensors.

Features

- Portable unit, measures on-the-go
- Internal rechargeable battery with separate external charger.
- Real-time air velocity and air temperature data
- Density compensated
- Simultaneous, multipoint measurements, accepts up to four AFS sensors
- Compatible with AccuTrac software
- Interfaces to RS-232 or optional printer



Simple to operate, integral keypad. Easy to read, real-time display of all four channels.



Internal record program allows for the creation and accumulation of several grids for testing fume hoods, biosafety cabinets, HEPA filters, and ducts; with each record representing a grid. Each individual sensor reading is stored in rows and columns specified by the user. Not only is each individual sensor reading stored, but the average flow and volumetric flow are automatically calculated. Records can be printed, stored, modified and downloaded at any time.



Biosafety cabinet courtesy of The Baker Company

Quattro Flow

Air Velocity Analyzers

Specifications

Carrying case and Universal Power Supply are included with the Quattro Flow. Additional probes, AccuTrac software, Printer, Wand and Grid can be purchased separately.

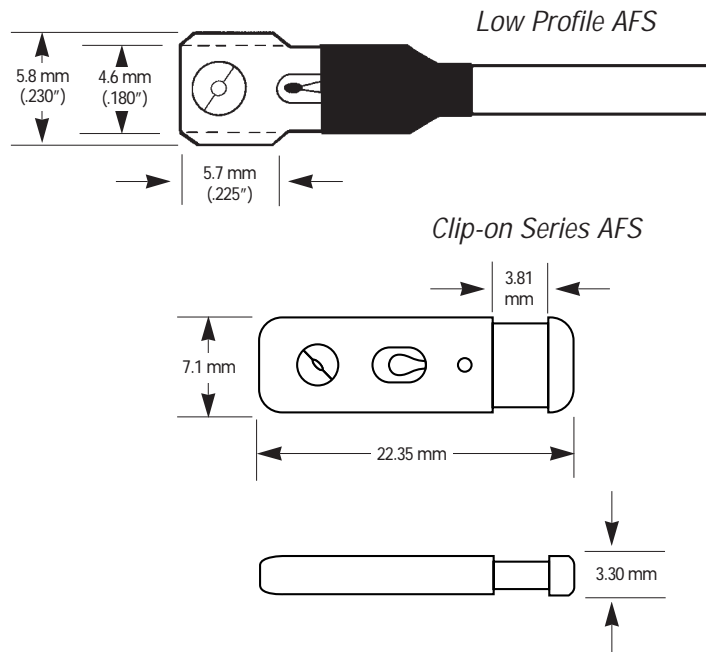
Quattro Flow Series operating information

Input voltage	90-265 VAC, 50-60 Hz
Power consumption	60 Watt max
Operating temperature range	0 to 70° C
Operating temperature range for specified system accuracy with probes	10 to 35° C
Storage temperature range	-20 to 100° C
Readout	16 x 4 Character LCD display
Weight	1.00 kg (2.20 lbs)
Dimensions	15.5 cm L x 15.5 W x 8.5 cm H
Keypad	6-Key touchpad with audible indicator
Density compensated from	0-10,000 ft AMSL

AFS Series Airflow Sensors Information

AFS airflow ranges	see insert sheet
Acceptance angle	± 25° typical
Standard shielded cable length	2 meters
Operating temperature range	0 to 70° C
Storage temperature range	-20 to 100° C
Additional cable lengths and optional grid available	

See insert sheet for accuracy specifications



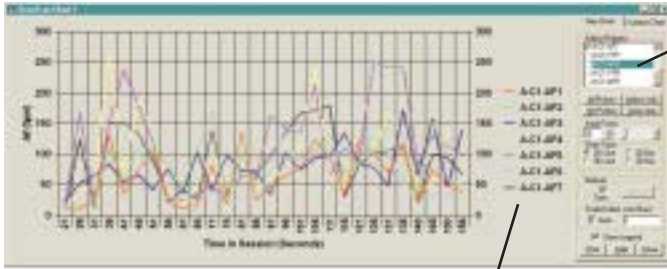
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ACCUTRAC SOFTWARE REV 4.0

Developed by Cambridge AccuSense for use with the ATM-24, TCM-24, FVA Series and Quattro Flow Velocity Analyzers.

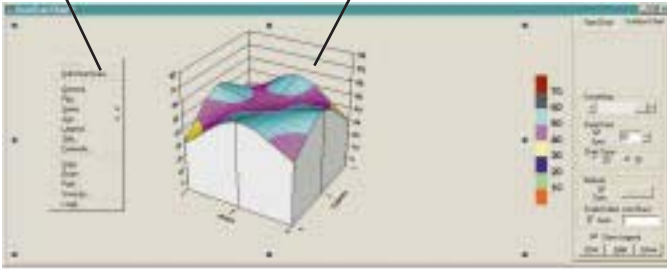


Legend shows each probe in a different color

Click on probe numbers you wish to see plotted. Click again to de-select

Click with the right mouse button anywhere in the chart to see the floating menu

Choose contour plot to analyze laminar flow patterns.



Com Port numbers and Airflow or Temperature (Probe) numbers are always displayed here

Click to select statistical choice

Double-click on the right mouse button to access spreadsheet program

Check the Track Data box to keep incoming data in view

The Windows™-based AccuTrac Software package from Cambridge AccuSense turns your PC into a powerful test and analysis center. Airflow, temperature and surface temperature data acquired by any Cambridge AccuSense instrument can now be displayed, saved, reviewed, graphed and printed without having to export the information to another program.

The user-friendly AccuTrac increases measurement versatility, reduces testing time and improves testing flexibility. AccuTrac allows you to connect up to four instruments. However, users can choose whether all data are to be viewed and graphed real-time, or saved and reviewed later. Increased flexibility is also achieved by viewing any number of samples. Files are saved in Excel spreadsheet format for use with other programs.

The latest AccuTrac version communicates directly with the ATM-24, TCM-24, FVA & Quattro Flow to automatically set up sampling times and measurement units, eliminating the need to set parameters in another terminal program. System requirements are Pentium 166 processor, 24 MB of RAM, 15MB of free disk space and CD ROM to install.

KEY FEATURES

- All-in-one package — no need to export data to other programs. Print graphs at any time during the test, or cut and paste into other programs. Full spreadsheet and graphing program included.
- Real-time graphing— analyze information as measurements are being taken.
- Wide analytical range — statistical options include average, min/max, and standard deviation and root mean square.
- Power — access multiple graphs simultaneously, go back to saved files as needed to view other probes or to re-examine test data.
- Data protection — immune to power interruptions, logged data is automatically saved as measurements are being taken.
- Versatility — Automated or manually-set axis control, data viewing and sensor labelling.
- Efficiency — graph all the various statistical measurements.
- User-friendly — Simply click on a probe to automatically graph its data.

For more extensive technical information on this software or other AccuSense products including the ATM-24, TCM-24, FVA and the Quattro Flow, please call our sales department.



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