

# S I AIRDATA™ MULTIMETER ADM-870C ELECTRONIC MICROMANOMETER

AIR FLOW • VELOCITY • PRESSURE • TEMPERATURE



## ADM-870C AIRDATA MULTIMETER

The **ADM-870C** AirData Multimeter is designed specifically for applications with very demanding air distribution requirements. The unique features of this meter are ideally suited for maintaining air quality control in facilities such as: hospitals; pharmaceutical, biological and medical research laboratories; semiconductor manufacturing clean rooms, and other applications in which the highest standards of the industry must be met.

The **RS232 communications port** allows the user to download readings to a printer or computer. Readings can be downloaded either individually or as a sequence from memory. Optional user-friendly software allows readings to be automatically inserted into an Excel™ or similar spreadsheet.

Air velocity and flow readings may be displayed as either **standard density** mass flow equivalent, or as **local density** air velocity or volumetric flow, as compensated for variations in barometric pressure and temperature.

The **auto-read** function allows continuous automatic readings for monitoring ongoing changes in a system as it is being adjusted.

Auto-read may also be used with the **memory** function to automatically store up to **200** readings. Each reading may be recalled, and the average and total of the readings may be displayed. The **averaging** feature is useful for measurements made under fluctuating conditions.

The **differential pressure** and **temperature** associated with a velocity reading are in short-term memory and may be displayed immediately following each velocity measurement.

- SERIAL OUTPUT TO PRINTER OR COMPUTER
- LABORATORY ACCURACY
- MASS FLOW EQUIVALENT OR TRUE AIR FLOW AND VELOCITY
- 200 READING MEMORY WITH AVERAGE / TOTAL / RECALL
- ENGLISH AND METRIC
- VELGRID AND AIRFOIL
- SUPPLY AND EXHAUST
- FUME HOODS



## Shortridge Instruments, Inc.

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# S I AIRDATA™ MULTIMETER

ELECTRONIC MICROMANOMETER

## ADM-870C



The multifunction model ADM-870C provides digital display of readings in English and metric units corrected for **local or standard** density. Features include **auto-read**, memory with total and average, display of **associated** pressure and temperature, VelGrid, AirFoil probe and **serial output to printer or computer**. Measures air velocity, absolute and differential pressure, temperature, and backpressure compensated air flow when used with the series 8400 FlowHood.



### FUME HOOD AND CLEAN ROOM TESTING

The **VelGrid** is an accessory designed especially for use in the measurement of general face velocity conditions such as exhaust hoods, HEPA clean room filter outlets, laminar flow work stations, and large filters and coils. Each reading represents the input of 16 velocity points over a one-square-foot area. A 54-inch adjustable extension handle and meter neckstrap allow convenient positioning and use of the VelGrid.

### DIFFERENTIAL PRESSURE MEASUREMENT

The AirData Multimeter measures an extremely wide range of pressures with very high accuracy. Despite its sensitivity, this meter can endure 20 psi differential pressure with no adverse effects. Absolutely no zero shift is caused by ranging or line pressure. Although designed for hand-held field use, this meter is as sensitive as some laboratory micromanometers.

### ACCURATE TEMPERATURE READINGS

The ADT440 **TemProbe** series is uniquely suited for wet bulb, dry bulb and water line temperatures. The optional eight point **AirData MultiTemp** is ideal for efficiency testing of air conditioning units and heat exchangers.

### AUTOMATIC ZERO AND RANGE SELECTION

Internal calibration, temperature compensation, range selection and zeroing are fully automatic with each reading. No external adjustments are ever needed.

### AIR DENSITY CORRECTED FLOW AND VELOCITY

Air flow and velocity readings are automatically corrected for the density effect of barometric pressure and temperature. Readings are displayed as either standard density (mass flow equivalent) or local density air velocity or flow.

### NEW AIR BALANCE ACCURACY

The air delivery of an outlet is reduced when a capture hood is in place. This "backpressure" caused flow reduction varies from one outlet or damper setting to another. The 8400 series **FlowHood** represents a major breakthrough in direct airflow measurement at supply and exhaust outlets. Backpressure compensated and noncompensated readings are recorded separately in memory, with display of average and sum for each function. The AirData Multimeter is easily installed on the FlowHood unit and integrates its instant microprocessor calculating power with the unique flaps feature in the FlowHood base. Each air flow reading may be compensated for the backpressure effect of the FlowHood.

The **FlowHood** kits include the base metering section with velocity averaging grid, various top size combinations and rugged carrying case.

### FAST ACCURATE DUCT VELOCITY TRAVERSES

One person can now perform **pitot tube** traverses in half the time previously required by two people. Each reading can be taken and entered into memory in about ten seconds. Each reading can be recalled, along with the sum and average of the readings, when the traverse is complete. The **AirFoil** probe is for general single point air velocity measurement. The straight shaft design permits easier use in ductwork.

### STORE AND RECALL READINGS, AVERAGE AND TOTAL

The memory feature of the meter can store up to 200 readings for later recall of each reading, the total, and the average of the readings. This greatly simplifies pitot tube traverses, the averaging of face velocities, temperatures and static pressures, and the recording of outlet readings.

### SPECIFICATIONS

**AIR VELOCITY:**  $\pm 3\%$  of reading  $\pm 7$  fpm from 50 to 8000 fpm using standard Series 160 pitot tube (29,000 fpm FS); 50 to 5000 fpm AirFoil; 50 to 2500 fpm VelGrid.

**DIFFERENTIAL PRESSURE:**  $\pm 2\%$  of reading  $\pm 0.001$  in wc from 0.0500 to 50.00 in wc, (0.0001 to 60 in wc FS); 20 psid safe pressure.

**TEMPERATURE:**  $\pm 0.5^\circ\text{F}$  accuracy from  $32^\circ\text{F}$  to  $158^\circ\text{F}$  using ADT440 Series TemProbes ( $-67^\circ\text{F}$  to  $250^\circ\text{F}$  FS);  $0.1^\circ\text{F}$  resolution.

**AIR FLOW:** Accuracy is  $\pm 3\%$  of reading  $\pm 7$  cfm from 100 to 2000 cfm; range is 25 to 2500 supply, 25 to 1500 exhaust with 8400 **FlowHood**.

**ABSOLUTE PRESSURE:**  $\pm 2\%$  of reading  $\pm 0.1$  in Hg from 14 to 40 in Hg referenced to vacuum. 60 psia maximum safe pressure.

**OPERATIONAL TEMPERATURE LIMITS:**  $40^\circ\text{F}$  to  $140^\circ\text{F}$ .

**AIR DENSITY CORRECTION:** Local or standard (mass flow) air density correction range is 14 to 40 in Hg and  $32^\circ\text{F}$  to  $158^\circ\text{F}$ .

**POSITION SENSITIVITY:** Unaffected by position.

**MEMORY:** 200 readings, sequence labeled, sum and average.

**CALIBRATION:** Calibration certified NIST traceable.

**READOUT:** 10 digit, 0.4", high contrast, liquid crystal display.

**METER HOUSING:** 6.0" x 6.4" x 2.7" high impact ABS. 36 oz.

**CONNECTIONS:** 1/4" OD slip-on for 3/16" ID soft tubing.

**BATTERY LIFE:** Up to 3000 readings/charge, 500 recharge cycles.

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