



Airflow™ Instruments Air Velocity Meters

TA500 Series



The Airflow™ Instruments TA500 Series Air Velocity Meters use guided workflows programmed for professionals allowing you to customize the instrument performance to meet your needs with the touch of one button.

The high-resolution color screen displays multiple measurements simultaneously in real-time with on-screen prompts to guide you through instrument setup and operation.

The Airflow™ Instruments TA500 Series Air Velocity Meters includes a built-in workflow for calculating the percentage of outside air used to determine ventilation effectiveness in a building or room. The TA550 adds built-in workflows for heat flow calculation and four methodologies for performing a duct traverse.

It's ergonomic design includes a probe holder and integrated magnets allowing for attachment to exposed ductwork, chemical fume hoods and biological safety cabinet frames for hands-free operation. These instruments are available with or without a differential pressure sensor, and are designed to work with a wide range of plug-in probes.

Applications

- HVAC testing and balancing
- Cleanroom testing
- Biological safety cabinet and laboratory fume hood testing
- HVAC commissioning and troubleshooting
- IAQ investigations
- Ventilation effectiveness with percent outside air calculation

Features and Benefits

- Large, high-resolution color display
- Intuitive menu structure allows for ease of use and setup
- Optional smart plug-in probes, including thermoanemometer, rotating vane and CO₂ probes with calibration certificates
- User-customizable soft keys for quick access to common functions
- Integrated magnets for hands-free operation
- Programmable for local language
- Air density compensation with on board barometric pressure sensor and temperature input

Additional Features for Model TA530 and TA550

- Static and differential pressure measurement
- Pitot probe duct traverse
- Programmable K-factors

Additional Features for Model TA550

- Step by step guided workflows including heat flow calculation
- Duct traverse grid measurements for
 - ASHRAE 111 log-Tchebycheff
 - ASHRAE 111 Equal Area
 - EN 12599
 - EN 16211



Models TA500, TA530, TA550

Airflow™ Instruments Air Velocity Meters Plug-In Probes

The plug-in probes allow users to make various measurements by simply plugging in a different probe that has the features and functions best suited for a particular application. Plug-in probes for the TA500 series can be ordered at any time and include a data sheet with certificate of traceability. When it's time for servicing, only the probe needs to be returned since all the calibration data is stored within the probe.

Thermoanemometer Air Velocity Probes

TSI offers four models featuring multiple measurements in a compact, robust probe design. These telescopic probes are available in straight or articulating construction, and with or without a relative humidity sensor. Models with a relative humidity sensor can also calculate wet bulb and dewpoint temperature. Common applications include duct traversing, face velocity testing of chemical fume hoods, biological safety cabinets and HEPA filters.

Rotating Vane Anemometer Probe

The 100 mm rotating vane probe measures air velocity and temperature with flow calculation. Measurement applications include face velocity as well as air velocity in turbulent airstreams. An optional telescopic articulating probe and Aircone kit are also available.

Pitot Probes

Pitot probes are used to obtain air velocity and air volume measurements within ductwork by performing a duct traverse. Pitot probes and tubing can be connected to the models TA530 and TA550 which contain a differential pressure sensor to measure the velocity pressure and calculate air flow. Consult factory for sizes and part numbers.

Indoor Air Quality (IAQ) Probes

A good indicator of proper ventilation is the level of CO₂ present in a space. Carbon dioxide is a normal by-product of occupant respiration. Elevated levels of CO₂ may indicate that additional dilution ventilation is required. IAQ probes are available to measure temperature, humidity, CO and CO₂ of indoor environments. Calculations include percent outside air, wet bulb and dew point temperatures.

VOC Probes (TA550-NB and TA550 only)

TSI® VOC probes are designed for evaluating or investigating indoor air quality (IAQ) conditions and are best suited for ambient, non-hazardous conditions. Common passive sensor monitoring applications include evaluating off-gassing of new building construction materials, point source location, comparing complaint to non-complaint areas and sensitization investigations.

Velocity (Pitot probe, Model TA530 and TA550)

Range ³	1.27 to 78.7 m/s
Accuracy ²	±1.5% at 10.16 m/s
Resolution	0.01 m/s
Duct Size	
Dimensions	2.5 to 1,270 cm in increments of 0.1 cm

Volumetric Flow Rate

Range Actual range is a function of velocity, pressure, duct size, and K factor

Static/Differential Pressure (Model TA530 and TA550)

Range	-28.0 to +28.0 mm Hg, -3,735 to +3,735 Pa H ₂ O
Accuracy	±0.01 mm Hg of reading ±1 Pa H ₂ O
Resolution	0.1 Pa, 0.01 mm Hg H ₂ O

Barometric Pressure

Range	517.15 to 930.87 mm Hg
Accuracy	±2% of reading

Instrument Temperature Range

Operating (Electronics)	5° to 45°C
Storage	-20° to 60°C

Data Storage Capabilities

Range	200 test IDs/162,200 samples (a sample is 1 or more measurements)
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Sample Interval

1 second to 1 hour

Time Constant

1, 5, 10, 20, 30, 60, 90 seconds

External Meter Dimensions

8.1 cm x 24.1 cm x 4.1 cm


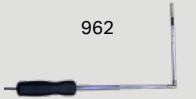

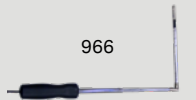





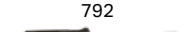
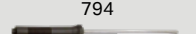


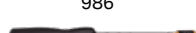


Meter Weight with Batteries

0.41 kg

Power Requirements

Four AA-size batteries or AC adapter

Probe Specifications

Model	Description	Range	Accuracy	Resolution
 960	Thermoanemometer Telescopic Straight Probe Velocity and Temperature	0 to 50 m/s	$\pm 3\%$ of reading or ± 0.015 m/s, whichever is greater ^{4&5}	0.01 m/s
		-18 to 93°C	$\pm 0.3^\circ\text{C}^6$	0.1°C
 962	Thermoanemometer Telescopic Articulating Probe Velocity and Temperature	0 to 50 m/s	$\pm 3\%$ of reading or ± 0.015 m/s, whichever is greater ^{4&5}	0.01 m/s
		-18 to 93°C	$\pm 0.3^\circ\text{C}^6$	0.1°C
 964	Thermoanemometer Telescopic Straight Probe Velocity, Temperature and Humidity	0 to 50 m/s	$\pm 3\%$ of reading or ± 0.015 m/s, whichever is greater ^{4&5}	0.01 m/s
		-10 to 60°C	$\pm 0.3^\circ\text{C}^6$	0.1°C
 966	Thermoanemometer Telescopic Articulating Probe Velocity, Temperature and Humidity	5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH
		0 to 50 m/s	$\pm 3\%$ of reading or ± 0.015 m/s, whichever is greater ^{4&5}	0.01 m/s
 966	Thermoanemometer Telescopic Articulating Probe Velocity, Temperature and Humidity	-10 to 60°C	$\pm 0.3^\circ\text{C}^6$	0.1°C
		5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH
 995	Rotating Vane 100 mm Probe Velocity and Temperature	0.25 to 30 m/s	$\pm 1\%$ of reading ± 0.02 m/s	0.01 m/s
		0 to 60°C	$\pm 1.0^\circ\text{C}$	0.1°C
 980	IAQ Probe CO ₂ , Temperature and Humidity	0 to 5,000 ppm CO ₂	$\pm 3\%$ of reading or ± 50 ppm CO ₂ , whichever is greater ⁸	1 ppm CO ₂
		5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH
		-10 to 60°C	$\pm 0.5^\circ\text{C}^6$	0.1°C
 982	IAQ Probe Model CO, CO ₂ , Temperature and Humidity	0 to 500 ppm CO	$\pm 3\%$ of reading or ± 3 ppm CO, whichever is greater ⁹	0.1 ppm CO
		0 to 5,000 ppm CO ₂	$\pm 3\%$ of reading or ± 50 ppm CO ₂ , whichever is greater ⁸	1 ppm CO ₂
		5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH
 800220	Telescopic Air Temperature and Relative Humidity Probe	-10 to 60°C	$\pm 0.3^\circ\text{C}$	0.1°C
		5 to 95% RH	$\pm 3\% \text{ RH}$	0.1% RH
 792	Thermocouple Surface Temperature Probe (Type K)	-40 to 650°C	$\pm 0.056\%$ of reading +2.2°C	0.1°C
 794	Thermocouple Air Temperature Probe (Type K)	-40 to 650°C	$\pm 0.056\%$ of reading +1.1°C	0.1°C
 984	Low Concentration (ppb) VOC and Temperature	10 to 20,000 ppb	$\pm 1.0^\circ\text{F} (\pm 0.5^\circ\text{C})^6$	10 ppb10
		14 to 140°F (-10 to 60°C)		0.1°F (0.1°C)
 985	High Concentration (ppm) VOC and Temperature	1 to 2,000 ppm	$\pm 1.0^\circ\text{F} (\pm 0.5^\circ\text{C})^6$	1 ppm10
		14 to 140°F (-10 to 60°C)		0.1°F (0.1°C)
 986	Low Concentration (ppb) VOC, Temperature, CO ₂ , and Humidity	10 to 20,000 ppb VOC	3% of reading or 50 ppm CO ₂ , whichever is greater	10 ppb10 VOC
		0 to 5,000 ppm CO ₂	$\pm 1.0^\circ\text{F} (\pm 0.5^\circ\text{C})^6$	0.1 ppm CO ₂
		14 to 140°F (-10 to 60°C)	$\pm 3\% \text{ RH}^7$	0.1°F (0.1°C)
 987	High Concentration (ppb) VOC, Temperature, CO ₂ , and Humidity	5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH
		1 to 2,000 ppm VOC	3% of reading or 50 ppm CO ₂ , whichever is greater	1 ppm10 VOC
		0 to 5,000 ppm CO ₂	$\pm 1.0^\circ\text{F} (\pm 0.5^\circ\text{C})^6$	0.1 ppm CO ₂
 987	High Concentration (ppb) VOC, Temperature, CO ₂ , and Humidity	14 to 140°F (-10 to 60°C)	$\pm 3\% \text{ RH}^7$	0.1°F (0.1°C)
		5 to 95% RH	$\pm 3\% \text{ RH}^7$	0.1% RH

Specifications

Airflow™ Instruments Air Velocity Meters

- 1 Pressure velocity measurements are not recommended below 5 m/s and are best suited to velocities over 10.00 m/s. Range can vary depending on barometric pressure.
- 2 Accuracy is a function of converting pressure to velocity. Conversion accuracy improves when actual pressure values increase.
- 3 Overpressure range = 360 mmHg H₂O, 48 kPa
- 4 Temperature compensated over an air temperature range of 5 to 65 °C.
- 5 The accuracy statement begins at 0.15 m/s through 50 m/s.
- 6 Accuracy with instrument case at 25 °C, add uncertainty of 0.03 °C/°C for change in instrument temperature.
- 7 Accuracy with probe at 25 °C. Add uncertainty of 0.2% RH/ °C for change in probe temperature. Includes 1% hysteresis.
- 8 At calibration temperature. Add uncertainty of ±0.5%/ °C for change in temperature.
- 9 At 25 °C. Add uncertainty of ±0.36%/ °C for change in temperature.

Parameter/Function	TA500	TA530	TA550-NB	TA550
Barometric Pressure	■	■	■	■
Differential Pressure		■	■	■
Thermocouple (1)	■	■	■	■
Thermoanemometer Probes (960, 962, 964, 966)	□	□	□	□
Rotating Vane Probe (995)	□	□	□	□
IAQ Probes (980, 982)	□	□	□	□
Pitot Probe		□	□	□
Air Density Correction	■	■	■	■
Calculate Flow	■	■	■	■
K-factor Flow		■	■	■
% Outside Air Calculation	■	■	■	■
ASHRAE 111 Log-Tchebycheff Duct Traverse Workflow			■	■
ASHRAE 111 Equal Area Duct Traverse Workflow			■	■
EN 16211 Duct Traverse Workflow			■	■
EN 12599 duct Traverse Workflow			■	■
Heat Flow Calculation (BTU/h, kW)			■	■
Wired USB Printer	□	□	□	□
Bluetooth® Printer				□
Duct Leakage Workflows			■	■
VOC Probes (984, 985, 986, 987)			■	■
Expanded Bluetooth Functionality				■
Expanded Global Languages	■	■	■	■

□ = Optional

Note: Displayed workflows are dependent on instrument model and attached probe.

To Order

Model	Description
TA500	Includes the meter, carrying case, 4 AA alkaline batteries, USB cable, owner's manual and calibration certificate
TA500-980	TA500 with 980 probe
TA500-982	TA500 with 982 probe
TA500-995	TA500 with 995 probe
TA500-960	TA500 with 960 probe
TA500-962	TA500 with 962 probe
TA530	Includes the meter, carrying case, 4 AA alkaline batteries, USB cable, one static pressure probe, 2.4 m tubing, owner's manual and calibration certificate
TA530-964	TA530 with 964 probe
TA530-966	TA530 with 966 probe
TA550	Includes the meter, carrying case, 4 AA alkaline batteries, USB cable, one static pressure probe, 2.4 m tubing, owners manual and calibration certificate
TA550-964	TA550 with 964 probe
TA550-966	TA550 with 966 probe
TA550-NB	Includes the meter, carrying case, 4 AA alkaline batteries, USB cable, one static pressure probe, 2.4 m tubing, owners manual and calibration certificate
TA550-NB-964	TA550-NB with 964 probe
TA550-NB-966	TA550-NB with 966 probe

Specifications are subject to change without notice.

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