

AIR VELOCITY TRANSDUCERS



Models 8455, 8465 and 8475

TSI's Air Velocity Transducers measure velocities using thermal anemometry.

Three distinct sensor types provide flexibility with wide dynamic ranges for accurate measurements. The durable Model 8455 general-purpose probe and the Model 8465 windowless probe deliver high accuracy with a fast response for a variety of applications. The omnidirectional Model 8475 offers accurate measurements at low velocities and is ideal for varying flow direction. All versions come with user selectable ranges and output options.

Three dependable sensors available

General Purpose (8455)

- Protected probe tip
- Rugged ceramic sensor
- Wide range of measurement applications
- Fast response time

Windowless (8465)

- Less flow blockage
- Ideal for measuring in confined spaces
- Fast response time

Omnidirectional (8475)

- Omnidirectional probe tip
- Accurate at low velocities from 0.05 to 0.5 m/s (10 to 100 ft/min)
- Ideal for unknown or varying flow direction



Applications

- Comfort and draft studies
- Critical environment installations like clean rooms and hospitals
- Diffuser design analysis
- Monitoring drying processes
- Monitoring air flows in tunnels and subways
- Used as a standard in wind tunnels and calibration facilities
- Environmental monitoring in greenhouses and IAQ applications
- General engineering applications



Air Velocity Transducer Models 8455, 8465, 8475

	8455	8465	8475
Accuracy ⁷ :	±2.0% of reading ¹ ±0.5% of full scale of selected range	±2.0% of reading ¹ ±0.5% of full scale of selected range	±3.0% of reading ² ±1.0% of full scale of selected range
Repeatability:	<±1.0% of reading ³	<±1.0% of reading ³	N/A
Response Time to Flow:	0.2 sec ⁴	0.2 sec ⁴	5.0 sec ⁵

Common specifications to all models:

Field Selectable Velocity Ranges

Model 8455/8465: 0.125 m/s to 1.0, 1.25, 1.50, 2.0, 2.5, 3.0, 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0, 25.0, 30.0, 40.0, 50.0 m/s
(25 ft/min to 200, 250, 300, 400, 500, 750, 1000, 1250, 1500, 2000, 2500, 3000, 4000, 5000, 7500, 10000 ft/min)

Model 8475: 0.05 m/s to 0.5, 0.75, 1.00, 1.25, 1.50, 2.0, 2.5 m/s
(10 ft/min to 100, 125, 150, 200, 250, 300, 400, 500 ft/min)

Minimum Resolution: 0.07% of selected full scale

Input Power: 11-30 VDC or 18-28 VAC, 350mA max⁶

Output Impedance: Voltage mode: less than 1 ohm, 20 mA max source current

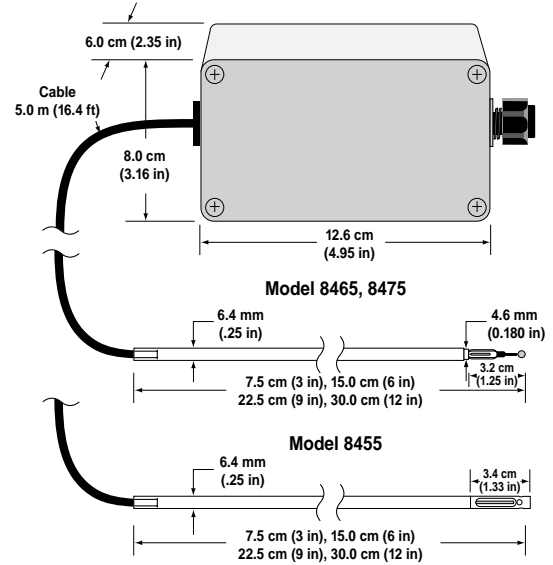
Output Resistance: Current mode: 500 ohms maximum load resistance

Output Signal (field selectable): 0-5V, 0-10V, 2-10V, 0-20mA, 4-20mA

Output Time Constant (field selectable): 0.05 to 10 seconds.

Probe Length: 7.5 cm, 15 cm, 22.5 cm or 30 cm (3 in., 6 in., 9 in. or 12 in.)

Temperature Range: Compensation Range: 0 to 60°C (32 to 140°F)
Electronics and Sensor Operation: 0 to 93°C (32 to 200°F)
Storage : 0 to 93°C (32 to 200°F)



Accessories:

Model 8495 Display, Monitor and Power Supply

- Provides unregulated 12 VDC power (500 mA) with TSI supplied AC adaptor
- Adjustable full scale reading and signal input
- Digital display indicates velocity
- User selectable audible and visual alarms



Model 8911 Power Supply

- Provides regulated 12 VDC power (500 mA) from 115 VAC source

¹ From 18 to 28°C (64.4 to 82.4°F), outside this range and within temperature compensation range add 0.2% per °C (0.4 per °F).

² From 20 to 26°C (68 to 78.8°F), outside this range and within temperature compensation range add 0.5% per °C (0.9 per °F).

Directional sensitivity of the Model 8475 is +5%/-20% of reading +0/-0.05 m/s (+0/-10 ft/min) over 270° solid angle regardless of flow direction.

³ Standard deviation, based on one minute average from 0.5 to 5.0 m/s (100 to 1000 ft/min).

⁴ For 63% of final value, tested at 7.5 m/s (1500 ft/min).

⁵ For 63% of final value, tested at 2.5 m/s (500 ft/min).

⁶ Input voltage must be maintained within specifications at the transducer.

⁷ Calibration occurs with sensor oriented horizontally in a horizontal flow. Uncertainty increases in downward vertical flow at velocities less than 50 ft/min (0.25 m/s).

All specifications subject to change without notice.



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