

# Multi-point Airflow Sensing!



Now outputs velocity weighted temperature

## Thermal Dispersion Technology:

- Permanently mounted devices use state-of-the-art technology and do not require periodic calibration or maintenance.
- **Accurately** measure **airflow rates** between 0 and 5,000 fpm (10,000 fpm with fan inlet sensors).
- Each sensing point is independent and calibrated to **NIST traceable** airflow and temperature standards.
- A microprocessor-based transmitter is included and provides **linear output signals** for both **airflow** and **temperature**.
- Your best choice for **direct outside airflow** measurement and **building pressure control**.
- Can be specified with up to 16 **independent** airflow and temperature **sensing points** per duct location.



Our Advantage product line includes a variety of airflow/temperature measuring devices.

**EBTRON**  
Thermal Dispersion Airflow Measurement

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Thermal dispersion airflow measurement devices calibrated to standards traceable to NIST.

## Advanced thermal dispersion technology outperforms the competition.

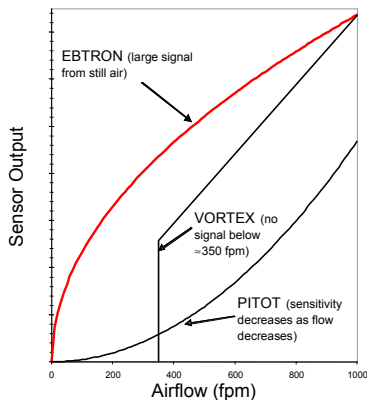
### Controlling airflow rates is essential for the successful operation of today's high performance buildings.

Outside air for the dilution of contaminants requires precise monitoring and control of outside airflow rates into the building.

Proper pressurization is essential to limit moisture development within the building envelope.

EBTRON has been manufacturing thermal dispersion airflow measurement products since 1984. Our trained application specialists, combined with an extensive local representative network, assure your designs meet the performance requirements demanded for today's 21st Century buildings.

**Signal Comparison**  
Unprocessed Signal to Transmitter



### Unsurpassed low flow sensitivity!

Each sensor is calibrated at up to 16 airflow rates. All calibration starts from still air. A large signal change with airflow results in accurate airflow measurement, even at low airflow. A microprocessor-based transmitter reads calibration data stored in a memory chip at the sensor probe cable connector plug and "flashes" it into memory during transmitter power up. This makes all EBTRON products "plug and play".

The transmitter essentially reverses the calibration process in the field. Each sensor pair is individually read by the transmitter. The measurements are summed and divided by the num-

ber of sensor points. A high speed microprocessor provides virtually instantaneous measurement. As a result, EBTRON technology is ideal for the direct measurement of outside airflow rates and flow tracking applications.

In addition, the transmitter is able to detect errors and ignore sensors if a sensor or cable gets damaged. As a result, your system is always running.

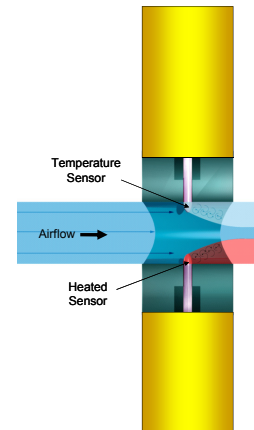
### How OUR Thermal Dispersion Works...

Each measurement point uses 2 stable "bead-in-glass" thermistor probes at each sensing point. One thermistor is "self-heated" above ambient temperature by passing current through it. The voltage across the "self-heated" thermistor is measured and the power dissipated to the air stream is calculated.

A second thermistor measures the ambient air temperature very accurately.

Each sensor pair is individually calibrated at 16 velocity points in one of EBTRON's specially designed wind tunnels.

The airflow rate is determined using an algorithm developed by EBTRON relating the power and delta T to the airflow rate.



Unlike pitot tube arrays that average non-linear pressures and vortex shedders that have averaging errors when the airflow rate falls below a minimum velocity, each sensing point is independent and contributes equally to the average output of the transmitter.

Model	Max. Sensors	Temperature Output	LCD Display	0-10VDC/4-20mA	RS-485	Ethernet	LonWorks FT-10	Remarks
GTx116-PD	16	.	.	.	.	.	.	Highest sensor density duct mounted device. Ideal for testing and balancing with EB-Link option installed.
GTx116-PC	16	.	.	.	.	.	.	Recommended sensor density for most HVAC duct mounted applications.
GTx116-PB	16	.	.	.	.	.	.	Lower sensor density can be substituted for "C" when greater distances than "C" minimums are available (consult factory).
GTx116-PA	16	.	.	.	.	.	.	Ideal upgrade for duct mounted pitot tube arrays. Highly linear and repeatable. May require field adjustment for best installed accuracy.
STx104-PB	4	.	.	.	.	.	.	Same as GTx116-PB without all of the transmitter features. Only available in limited sizes (smaller ducts).
STx104-PA	4	.	.	.	.	.	.	Same as GTx116-PA without all of the transmitter features. Only available in limited sizes (smaller ducts).
GTx116-F	4	.	.	.	.	.	.	Ideal device for inlet mounted fan tracking applications when duct mounted options are unavailable.
STx104-F	4	.	.	.	.	.	.	Same as GTx116-F without all of the transmitter features.
GTx116-B	4	.	.	.	.	.	.	Use to measure ultra-low differential flow/pressure between spaces. Also used for relief damper control.
STx102-B	1	.	.	.	.	.	.	Same as GTx116-B without all of the transmitter features.
STx104-U	2	.	.	.	.	.	.	Designed to measure outside air in several styles of classroom unit ventilators.
STx102-T	2	.	.	.	.	.	.	Smaller duct mounted probe design than -P. Ideal for terminal box and small duct measurement.
SCN202-T	2	*	.	.	.	.	.	BACnet® master controller for terminal boxes. Includes accurate thermal dispersion duct mounted airflow sensor. Available with optional occupancy counter for demand controlled ventilation reset.

\* RS-485 output available as BACnet® only.