EBTRON®
a measurable difference!

Advantage III

Airflow Measurement with Temperature and Alarm Capability

- ■ Thermal Dispersion Technology
- ■ Economical Sensor Density
- ■ NIST-traceable Calibration
- ■ *%-of-reading* Accuracy
- ■ Airflow and Status Alarm
- ■ Temperature Output Capability
- ■ Analog and RS-485 Output Models
- ■ Three Mounting Styles
- ■ Remote Transmitter with LCD Display
- ■ 3-year Warranty

BTL BACnet TESTING LABORATORIES

c UL us LISTED

CE

The HTx104-**PE** is EBTRON's most economical solution for larger systems when "out-of-the-box" installed accuracy is not required and field adjustment is acceptable. Perfect for LEED outdoor air delivery monitoring or other low sensor density airflow measurement applications.

Typical Applications

- ♦ LEED Outdoor Air Delivery Monitoring
- ♦ Small Duct Airflow Tracking
- ♦ Hospital Pressurization
- ♦ Laboratory Pressurization
- ♦ Air Change Verification & Monitoring
- ♦ System Performance Monitoring

Benefits

- ♦ Comply with ASHRAE Standards
- ♦ Demonstrate Code Compliance
- ♦ Satisfy LEED Prerequisites and Credits
- ♦ Provide Acceptable IAQ
- ♦ Save Energy
- ♦ Reduce Liability
- ♦ Improve Performance

Product Highlights

- ♦ Accurate and Repeatable
- ♦ Low Airflow Capability
- ♦ Volumetric or Mass Airflow Measurement
- ♦ Long-term Stability
- ♦ "Plug and Play" Operation
- ♦ Intuitive User Interface
- ♦ Waterproof Sensor Assembly
- ♦ FEP Plenum Rated Cables

HTx'04-PE_Overview_r3a

General

Probe and Sensor Node Configurations (max.)
1 probes x 4 sensor nodes/probe
2 probes x 2 sensor nodes/probe
Installed Airflow Accuracy[1]
Ducts/Plenum ≤ 2 sq.ft. [0.18 sq.m]**:** ±3% of reading
All other applications and sizes: Unspecified
PE Sensor Density Rules (typical)

Area (sq.ft.) [sq.m]	Sensor Nodes
≤ 0.5 [0.046]	1
> 0.5 & ≤ 1 [0.092]	2
> 1 [0.092]	4

Sensor Node Averaging Method
Airflow: Independent, arithmetic average
Temperature: Independent, velocity weighted or arithmetic average
Listings
UL: UL 873 Listed
CE: European shipments only
BACnet International: BTL Listed (HTN104 transmitter)
Environmental Limits
Temperature:
Probes: -20 to 160 ^{o}F [-28.9 to 71.1 ^{o}C]
Transmitter: -20 to 120 ^{o}F [-28.9 to 48.9 C]
Humidity: (non-condensing)
Probes: 0 to 100%
Transmitter: 5 to 95%

Individual Sensing Nodes

Sensing Node Sensors
Self-heated sensor: Precision, hermetically sealed, bead-in-glass thermistor probe
Temperature sensor: Precision, hermetically sealed, bead-in-glass thermistor probe
Sensing Node Housing
Material: Glass-filled Polypropylene (Kynar® with /SS option)
Sensor Potting Materials: Waterproof marine epoxy
Sensing Node Internal Wiring
Type: Kynar® coated copper
Airflow Measurement
Accuracy: ±2% of reading to NIST-traceable airflow standards (includes transmitter uncertainty)
Calibrated Range: 0 to 5,000 fpm [0 to 25.4 m/s]
Calibration Points: 16
Temperature Measurement
Accuracy: ±0.15 ^{o}F [0.08 ^{o}C] to NIST-traceable temperature standards (includes transmitter uncertainty)
Calibrated Range: -20 to 160 ^{o}F [-28.9 to 71.1 ^{o}C]
Calibration Points: 3

Sensor Probe Assembly

Tube
Material: Gold anodized 6063 aluminum (316 stainless steel with /SS option)
Mounting Brackets
Material: 304 stainless steel
Mounting Options & Standard Size Limits[2]
Insertion, and Stand-off: 6 to 120 in. [152.4 to 3048 mm]
Internal: 8 to 120 in. [203.2 to 3048 mm]
Probe to Transmitter Cables
Type: FEP jacket, plenum rated CMP/CL2P, UL/cUL listed, -67 to 392 ^{o}F [-55 to 200 ^{o}C], UV tolerant
Standard Lengths: 10, 15, 20, 25, 30, 40 and 50 ft. [3.1, 4.6, 6.1, 7.6, 9.1, 12.2 and 15.2 m]
Connecting Plug: 0.60" [15.24 mm] circular DIN

Transmitter

Power Requirement: 24 VAC (22.8 to 26.4 under load) @11V-A
PCB Connections: Gold-plated PCB interconnects and test points
User Interface: 16-character LCD display and 4 button interface
B.A.S. Connectivity Options
HTA104 Transmitter: Two field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals (AO1=airflow, AO2=temperature or alarm)
HTN104 Transmitter: One field selectable (BACnet MS/TP or Modbus RTU) and isolated RS-485 network connection- Individual sensor node airflow rates and temperatures are available via the network
Airflow Alarm
Type: Low and/or high user defined setpoint alarm
Tolerance: User defined % of setpoint
Delay: User defined
Zero Disable: Alarm can be disabled when the airflow rate falls below the low limit cutoff value (unoccupied periods)
Reset Method: Manual or automatic
Visual Indication: Yes, LCD display
Network Indication: Yes (HTN104 only)
Analog Signal Indication: Yes, on AO2 assignment (HTA104 only)
System Status Alarm
Type: Sensor diagnostic system trouble indication
Visual Indication: Yes, LCD display
Network Indication: Yes (HTN104 only)
Analog Signal Indication: Yes, on AO2 assignment (HTA104 only)

[1] Installed airflow accuracy is the actual system accuracy expected and includes sampling uncertainty of the sensor probes when installation meets or exceeds placement guidelines.
[2] Custom probes are available up to 192 inches. Contact factory for more information.