

Airflow Measurement with Temperature and Alarm Capability



- Thermal Dispersion Technology
- Cost Effective Single Probe
- NIST-traceable Calibration
- %-of-reading Accuracy
- Airflow and Status Alarm
- Temperature Output Capability
- Analog and RS-485 Output Models
- Duct Insertion Mounting
- Remote Transmitter with LCD Display
- 3-year Warranty



The HTx104-T is EBTRON’s measurement solution for round ducts between 4 and 16 inches in diameter when a remote display is desired. Ideal for small duct airflow measurement and airflow tracking applications. More output circuit protection than the EF-x2000-T with a true 4-20mA output option (HTA104-T) make this the best choice for all small duct measurement applications.

Typical Applications

- ◆ High Performance CV/VAV Terminal Box Measurement
- ◆ Small Duct Outdoor Air Delivery Monitoring
- ◆ Small Duct Airflow Tracking
- ◆ Hospital Pressurization
- ◆ Laboratory Pressurization

Benefits

- ◆ Improve Terminal Box Performance with Turndown
- ◆ Comply with ASHRAE Standards
- ◆ Satisfy LEED Prerequisites and Credits
- ◆ Provide Acceptable IAQ
- ◆ Save Energy
- ◆ Reduce Liability
- ◆ Improve Performance

Product Highlights

- ◆ Accurate & 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 Cable

General

Probe and Sensor Node Configurations (max.)

- 1 probe x 1 sensor node/probe (4 inch [101.6 mm] probe)
- 1 probe x 2 sensor nodes/probe (5 to 16 inch [127.0 to 406.4 mm] probes)

Installed Airflow Accuracy¹

±3% of reading

Sensor Node Averaging Method

- Airflow:** Independent, arithmetic average
- Temperature:** Independent, velocity weighted average

Listings and Compliance

- UL:** UL-873 and CSA C22.2 No. 24
- CE:** Non-UK European shipments only
- UKCA:** UK shipments only
- BACnet International:** BTL Listed (HTN104 transmitter)
- FCC:** This device complies with Part 15 of the FCC rules
- RoHS:** This device is RoHS2 compliant

Environmental Limits

Temperature:

- Probes:** -20 to 160 °F [-28.9 to 71.1 °C]
- Transmitter:** -20 to 120 °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:** ±3% of reading to NIST-traceable volumetric airflow standards (includes transmitter uncertainty)
- Calibrated Range:** 0 to 3,000 FPM [0 to 15.24 m/s]
- Calibration Points:** 7

Temperature Measurement

- Accuracy:** ±0.15 °F [0.08 °C] to NIST-traceable temperature standards (includes transmitter uncertainty)
- Calibrated Range:** -20 to 160 °F [-28.9 to 71.1 °C]
- Calibration Points:** 3

Sensor Probe Assembly

Tube

- Material:** Mill finish 6063 aluminum (316 stainless steel with /SS option)

Mounting Brackets

- Material:** 304 stainless steel

Mounting Options & Size Limits

- Insertion:** 4, 5, 6, 7, 8, 9, 10, 12, 14, and 16 inch round [101.6, 127.0, 152.4, 177.8, 203.2, 228.6, 254.0, 304.8, 355.6 & 406.4 mm]

Probe to Transmitter Cables

Type: FEP jacket, plenum rated CMP/CL2P, UL/cUL listed, -67 to 302 °F [-55 to 150 °C], UV tolerant

Standard Lengths: 3, 10, 25 and 50 ft. [0.9, 3.1, 7.6 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) @8V-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.