SWSI & DWDI AIRFLOW MEASUREMENT WITH TEMPERATURE AND ALARM CAPABILITY

PRODUCT HIGHLIGHTS

- *"Plug and Play"* operation
- EBTRON exclusive bead-in-glass thermistor sensors
- Sensor nodes are individually calibrated at 16 airflow rates to NIST traceable standards
- 0 to 10,000 FPM calibrated range with percent-of-reading accuracy
- Airflow and status alarm
- Temperature output capability
- Analog and RS-485 output models
- Five mounting styles
- Remote transmitter with LCD display
- Actual (CFM) or mass (SCFM) airflow measurement
- Velocity-weighted temperature measurement between -20° F to 160° F
- Smart *Sensor Detection System* (*SDS*) continuously monitors for sensor and transmitter faults
- Standard FEP plenum rated cable between sensor probes and transmitter
- Three-year warranty
- Toll-free customer support for the lifetime of the product

TYPICAL APPLICATIONS

- Fan airflow tracking
- Air change verification and monitoring
- Fan performance monitoring

EBTRON ADVANCED THERMAL DISPERSION TECHNOLOGY

EBTRON pioneered bead-in-glass thermistor based thermal dispersion over 40 years ago. EBTRON's thermal dispersion technology relates the power dissipated by a self-heated thermistor to the airflow rate at one or more sensor nodes in an airstream. All EBTRON airflow monitoring systems use this time-tested thermal dispersion technology.

MODEL DESCRIPTION

The HTx104-F/SI and HTx104-F/DI are EBTRON's most economical solution for accurate and repeatable airflow measurement in SWSI and DWDI fans. Airflow, temperature and/or airflow alarming are available on all models. Does not affect fan performance. The HTx104-F transmitter has isolated outputs with a true 4-20mA output option (HTA104-F).

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HTx104-F TECHNICAL SPECIFICATIONS

General

Probe and Sensor Node Configurations
- **SWSI and DWDI fans:** 2 probes x 1 sensor node per probe in each fan inlet

Installed Airflow Accuracy[1]
- ±(3% to 10%) of reading, depending on fan type and installation. May be improved by field adjustment using the Field Adjust Wizard (FAW) to a reliable reference.

Sensor Node Averaging Method
- **Airflow:** Independent, arithmetic average
- **Temperature:** Independent, velocity weighted average

Listings and Compliance
- **UL:** 60730-1; CAN/CSA-E60730-1
- **CE:** Yes
- **UKCA:** Yes
- **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 ºF [-28.9 to 71.1 ºC]
  - **Transmitter:** -20 to 120 ºF [-28.9 to 48.9 ºC]
- **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
- **Temperature sensor:** Precision, hermetically sealed, bead-in-glass thermistor

Sensing Node Housing
- **Material:** Glass-filled Polypropylene
- **Sensor Potting Materials:** Waterproof marine epoxy

Airflow Measurement
- **Accuracy:** ±2% of reading to NIST-traceable airflow standards (includes transmitter uncertainty)
- **Calibrated Range:** 0 to 10,000 fpm [0 to 50.8 m/s]
- **Calibration Points:** 16

Temperature Measurement
- **Type:** Velocity-weighted average
- **Accuracy:** ±0.15ºF [0.08 ºC] to NIST-traceable temperature standards (includes transmitter uncertainty)
- **Calibrated Range:** -20 to 160 ºF [-28.9 to 71.1 ºC]
- **Calibration Points:** 3

Sensor Probe Assembly

Mounting Rods
- **Material:** Zinc plated steel

Mounting Brackets (Throat, Forward, Face, Flare)
- **Material:** 304 stainless steel

Mounting Brackets (Cantilever)
- **Material:** Zinc plated steel

Mounting Options & Size Limits
- **Throat:** 6 to 66 inches [152.4 to 1676.4mm] (throat diameter)
- **Forward:** 6 to 64 inches [152.4 to 1625.6 mm] (diameter at inlet entrance)
- **Face:** 11 to 77 inches [279.4 to 1955.8] (diameter at inlet entrance)
- **Flare:** 6 to 57 inches [152.4 to 1447.8 mm] (opening size at backdraft damper inlet)
- **Cantilever**: 11 to 82 inches [279.4 to 2082.8 mm] (diameter at inlet entrance

Probe to Transmitter Cables
- **Type:** FEP jacket, plenum rated CMP/FT6/CL2P, UL/cUL listed, -67 to 302 ºF [-55 to 150 ºC], UV tolerant
- **Standard Lengths:** 10, 25, and 50 ft. [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) @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.