

Fan Array Airflow Measurement with Temperature and Alarm Capability

**OVERVIEW**



- Thermal Dispersion Technology
- Supports up to 8 Fans
- NIST-traceable Calibration
- %-of-reading Accuracy
- Individual Fan Airflow Alarms
- Temperature Output Capability
- Combination Analog/Network Models
- Face, Forward and Flare Mounting
- Remote Transmitter with LCD Display
- 3-year Warranty

The GTx108-**F**/An is EBTRON’s solution for accurate and repeatable airflow measurement in fan arrays. One to eight fans are supported. Airflow, temperature and/or airflow alarming are available on all models. Individual fan airflow rates and fan alarming are available with combination analog output/network models. Does not affect fan performance of sensitive plenum fans.

**Typical Applications**

- ◆ Fan Airflow Tracking
- ◆ Air Change Verification & Monitoring
- ◆ Individual Fan Performance Monitoring & Fault Detection

**Benefits**

- ◆ Monitor up to 8 Fans with a Single Transmitter
- ◆ Demonstrate Fan Performance and Operation
- ◆ Improve Fan Tracking of VAV Systems
- ◆ Comply with ASHRAE Standards
- ◆ Save Energy
- ◆ Reduce Fan Horsepower

**Product Highlights**

- ◆ Accurate and Repeatable
- ◆ Long-term Stability
- ◆ Streamline Design
- ◆ Individual Fan Airflow Monitoring & Alarming
- ◆ Adjustable Mounting Brackets
- ◆ “Plug and Play” Operation
- ◆ FEP Plenum Rated Cables

## General

### Probe and Sensor Node Configurations

**Fan Arrays (less than or equal to 4 fans):** 2 probes x 1 sensor node per probe or 1 probe x 1 sensor node per probe in each fan

**Fan Arrays (greater than 4 fans):** 1 probe x 1 sensor node per probe in each fan (8 probe maximum)

### Sensor Node Averaging Method

**Airflow:** Independent, arithmetic average per fan

**Temperature:** Independent, velocity weighted or arithmetic average

### Listings

**UL:** UL 873 Listed

**BACnet International:** BTL Listed (GTC108 and GTM108 transmitters)

### 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

**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

**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

### Mounting Rods

**Material:** Zinc plated steel

### Mounting Brackets

**Material:** 304 stainless steel

### Mounting Options & Size Limits

**Forward:** 6 to 64 inches [152.4 to 1676.4 mm] (diameter at inlet entrance)

**Face:** 11 to 77 inches [152.4 to 1625.6 mm] (diameter at inlet entrance)

**Flare:** 6 to 57 inches [279.4 to 1955.8 mm] (opening size at backdraft damper inlet)

### Probe to Transmitter Cables

**Type:** FEP jacket, plenum rated CMP/CL2P, UL/cUL listed, -67 to 392 °F [-55 to 200 °C], UV tolerant

**Standard Lengths:** 10, 25, and 50 ft. [3.1, 7.6 and 15.2 m]

**Connecting Plug:** 9/16" [14.29 mm] nominal diameter with gold-plated connector pins

## Transmitter

**Power Requirement:** 24 VAC (22.8 to 26.4 under load) @16V-A

**Connector Receptacle Pins and PCB Connections:** Gold-plated receptacle pins, PCB interconnects, PCB edge fingers, and test points

**User Interface:** 16-character LCD display and 4 button interface

### B.A.S. Connectivity Options

**GTC108 Transmitter:** Two field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals (AO1=airflow, AO2=temperature or alarm) plus 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 - Individual fan airflow rates are available via the network

**GTM108 Transmitter:** Two field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals (AO1=airflow, AO2=temperature or alarm) plus one isolated Ethernet (simultaneously supported BACnet Ethernet or BACnet IP, Modbus TCP and TCP/IP) network connection - Individual sensor node airflow rates and temperatures are available via the network - Individual fan airflow rates are available via the network

**GTL108 Transmitter:** One isolated Lonworks Free Topology network connection - Individual fan airflow rates and temperatures are NOT available via the network on multiple fan systems

**GTD108 Transmitter:** One USB connection for thumb drive data-logging of sensor airflow and temperature over specified time intervals

### 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 (GTM108 and GTC108 only)

**Analog Signal Indication:** Yes, on AO2 assignment

### Fan Alarm

**Type:** Minimum airflow, % deviation from median airflow, or % deviation from maximum airflow stored in memory

**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 (GTM108 and GTC108 only)

**Analog Signal Indication:** Yes, on AO2 assignment

### System Status Alarm

**Type:** Sensor diagnostic system trouble indication

**Visual Indication:** Yes, LCD display

**Network Indication:** Yes

**Analog Signal Indication:** Yes, on AO2 assignment

**EB-Link Infra-red Interface (with /EL option):** Provides individual airflow and temperature data to an *EB-Link Reader*