

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 GTx108e-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. Bluetooth® low energy technology interface.

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)

Installed Airflow Accuracy¹

±(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 per fan

Temperature: Independent, velocity weighted average

Listings and Compliance

UL: UL-873 and CSA C22.2 No. 24

CE: Yes

BACnet International: BTL Listed (GTC108e and GTM108e transmitters)

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

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 302 °F [-55 to 150 °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: 2 line x16-character backlit LCD display and 4 button interface

B.A.S. Connectivity Options

All Transmitters: Three field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals (AO1=airflow, AO2=temperature or alarm, AO3=Not Used).

GTA108e Transmitter: No additional connectivity to B.A.S.

GTC108e Transmitter: One additional 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

GTM108e Transmitter: One additional 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

GTf108e Transmitter: One additional isolated Lonworks Free Topology network connection

GTU108e Transmitter: One additional USB connection for thumb drive data-logging of sensor node airflow rates and temperatures

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 Bluetooth[®] low energy Interface for Android[®] and iPhone[®]: Download individual sensor node airflow/temperature data, settings and diagnostics.

¹ Installed airflow accuracy is the actual system accuracy expected and includes sampling uncertainty of the sensor probes.