The GTx108-F is EBTRON’s solution for accurate and repeatable airflow measurement in fan inlets. SWSI, DWI and Fan Arrays are supported. Airflow (FPM or CFM), 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.

### Typical Applications
- Fan airflow tracking
- Makeup/exhaust airflow measurement and control
- Air change verification and control
- Fan array airflow monitoring and fault detection

### Advanced Features
- Thermal dispersion technology
- Fits SWSI, DWI and Fan Arrays
- One transmitter supports up to 8 fans
- Individual fan airflow measurement
- Individual fan airflow alarming
- Accurate and repeatable
- Does not affect fan performance\(^1\)
- Unsurpassed connectivity choices
- Adjustable mounting brackets
- 3-year warranty

\(^1\) Face, forward or flare mount suggested on plenum fans

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**Product Selection and Application**

### Mounting Styles

The GTx108-F is available in four mounting styles. The original **throat** mounting style is mounted in the smallest opening of the fan inlet. A **face** mounting style is ideal for all fans. The **forward** mounting style is available for applications where an inlet screen in the inlet cone interferes with mounting of the throat or face mount devices. The face and forward mounting styles are less affected by grease carry-over on fans with bearing systems in the inlet. A flare mounting style can be installed upstream of backdraft dampers and not in the inlet on fan arrays. The face, forward and flare mounting styles are recommended for use on plenum fans which exhibit performance loss when devices are installed in the inlet throat. These mounting styles **do NOT affect the performance** of sensitive plenum fans. Each sensor probe has one thermal dispersion airflow sensing node and FEP plenum rated cable with connector plug. Sensor probe locations are based on equal area at the plane of the leading edge of each sensor node. Simply measure the diameter or opening where the sensor probes will be located and follow the installation guidelines provided with each sensor. A range of mounting bracket sizes are available for each mounting style.

**THROAT MOUNT**

**FACE MOUNT**

**FORWARD MOUNT**

**FLARE MOUNT**

### SWSI and DWDI Fans (/SI and /DI options)

One pair of sensor probes are installed in each fan inlet (a total of 2 in SWSI and 4 in DWDI fans). A Setup Wizard prompts the user for the type of fan (SWSI or DWDI) and diameter or area where probes are mounted to determine the airflow rate in CFM.

The GTx108-F/SI and -F/DI are ideal for measuring airflow rates and temperatures when duct mounted alternatives are not available.

The **Field Adjust Wizard** (FAW) tool may be used to improve installed accuracy on applications where bearing housings, structural supports, belt guards, etc. may adversely affect measurement accuracy.

The built-in airflow **Alarm** can be used to detect fan failure or performance loss using the second analog output (AO2) of the transmitter or via network communications on RS-485 and Ethernet models.
Fan Arrays (/An, where probes = n = 1 to 8)

The GTx108-F/An for fan arrays is the perfect solution for today’s popular air movement solution.

Designed specifically for fan arrays, the /An configuration allows for the individual measurement of 1 to 8 fan cubes. One or two sensing probes can be installed in each fan cube for arrays up to four fans. One sensor probe can be installed in fan arrays greater than four fans.

The area of individual fans can be entered using the Setup Wizard in the transmitter. Face, forward and flare mounting styles will not affect fan performance. Avoid the throat mounting style on sensitive plenum fans.

The GTC108-F/An and GTM108-F/An have a Fan Alarm in addition to the airflow Alarm that can detect individual fan failure or performance loss.

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**INDIVIDUAL FAN ALARMING METHODS**

<table>
<thead>
<tr>
<th>MINIMUM</th>
<th>User defined minimum FPM or CFM</th>
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</thead>
<tbody>
<tr>
<td>DEVIATION</td>
<td>User defined % deviation from median FPM or CFM of all fans</td>
</tr>
<tr>
<td>% MAXIMUM</td>
<td>% deviation from maximum velocity stored of each individual fan</td>
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</table>

The Fan Alarm is available via the network or by assignment of the alarm to the second analog output, AO2, on GTC108 and GTM108 models. Fan failure on the analog output can be determined by the magnitude of the output signal (fan 1 failure = 10% of F.S., fan 2 failure = 20% of F.S., etc.)

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Transmitter Selection

- **GTC108 Transmitter**: Two field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals plus one field selectable (BACnet MS/TP or Modbus RTU) and isolated RS-485 network connection.

- **GTM108 Transmitter**: Two field selectable (0-5/0-10 VDC or 4-20mA), scalable and isolated analog output signals plus one isolated Ethernet (simultaneously supported BACnet Ethernet or BACnet IP, Modbus TCP and TCP/IP) network connection.

- **GTL108 Transmitter**: One isolated Lon network connection.

- **GTD108 Transmitter**: One USB connection for thumb drive data-logging of sensor airflow and temperature over specified time intervals.
System
Probes and Sensor Node Configurations (max.)
- SWSI and DWDI fans: 2 probes x 1 sensor node per probe in each fan inlet
- 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 Nodes 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 (GTC108 and GTM108 transmitters)

Environmental Limits
- Temperature:
  - Probes: -20 to 160 °F
  - Transmitter: -20 to 120 °F
- 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
- Calibration Points: 16

Temperature Measurement
- Accuracy: ±0.18°F to NIST-traceable temperature standards (includes transmitter uncertainty)
- Calibrated Range: -20 to 160 °F
- Calibration Points: 3

Sensor Probe Assembly
Mounting Rods
- Material: Zinc plated steel

Mounting Brackets
- Material: 304 stainless steel

Mounting Options & Size Limits
- Throat: 6 to 66 inches (throat diameter)
- Forward: 6 to 64 inches (diameter at inlet entrance)
- Face: 11 to 77 inches (diameter at inlet entrance)
- Flare: 6 to 57 inches (opening size at backdraft damper inlet)

Probe to Transmitter Cables
- Type: FEP jacket, plenum rated CMP/CL2P, UL/cUL listed, -67 to 392 °F, UV tolerant
- Standard Lengths: 10, 25, and 50 ft. (non-standard lengths up to 50 ft. available)

Connecting Plug: 9/16" 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 on fan array systems

- 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 on fan array systems

- 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