

Airflow Measurement with Temperature and Alarm Capability

OVERVIEW



- Thermal Dispersion Technology
- High Sensor Density
- NIST-traceable Calibration
- *%-of-reading* Accuracy
- Airflow and Status Alarm
- Temperature Output Capability
- Combination Analog/Network Models
- Three Mounting Styles
- Remote Transmitter with LCD Display
- 3-year Warranty

The GTx116-**P+** is EBTRON’s top-of-the-line measurement solution for accurate and repeatable measurement in ducts and plenums. Ideal for outdoor air delivery monitoring and airflow tracking applications. Temperature and alarm capability plus unsurpassed product features and connectivity options make this the best choice for today’s high performance buildings.

Typical Applications

- ◆ Outdoor Air Delivery Monitoring
- ◆ Differential Airflow Tracking
- ◆ Hospital Pressurization
- ◆ Laboratory Pressurization
- ◆ Air Change Verification & Monitoring
- ◆ System Performance Monitoring

Benefits

- ◆ Comply with ASHRAE Standards
- ◆ Demonstrate Code Compliance
- ◆ Satisfy LEED Prerequisites and Credits
- ◆ Provide Acceptable IAQ
- ◆ Save Energy
- ◆ Reduce Liability
- ◆ Improve Performance

Product Highlights

- ◆ Best Installed Accuracy
- ◆ Low Airflow Capability
- ◆ Volumetric or Mass Airflow Measurement
- ◆ Long-term Stability
- ◆ “Plug and Play” Operation
- ◆ Intuitive User Interface
- ◆ Waterproof Sensor Assembly
- ◆ FEP Plenum Rated Cables

General

Probe and Sensor Node Configurations (max.)

- 2 probes x 8 sensor nodes/probe
- 4 probes x 4 sensor nodes/probe

Installed Airflow Accuracy¹

- Ducts/Plenum: ±3% of reading
- Non-ducted OA Intakes: better than or equal to ±5% of reading

P+ Sensor Density Rules

Area (sq.ft.) [sq.m]	Sensor Nodes	Area (sq.ft.) [sq.m]	Sensor Nodes
≤ 0.5 [0.046]	1	> 4 & ≤ 8 [0.743]	8
> 0.5 & ≤ 1 [0.092]	2	> 8 & ≤ 12 [1.11]	12
> 1 & ≤ 2 [0.185]	4	> 12 & ≤ 14 [1.30]	14
> 2 & ≤ 4 [0.371]	6	> 14 [1.30]	16

Sensor Node 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 (GTC116 and GTM116 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 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:** ±2% of reading to NIST-traceable airflow standards (includes transmitter uncertainty)
- Calibrated Range:** 0 to 5,000 fpm [25.4 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

Tube

- Material:** Gold anodized 6063 aluminum (316 stainless steel with /SS option)

Mounting Brackets

- Material:** 304 stainless steel

Mounting Options & Standard Size Limits²

- Insertion and Stand-off:** 6 to 120 in. [152.4 to 3048 mm]
- Internal:** 8 to 120 in. [203.2 to 3048 mm]

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, 15, 20, 25, 30, 40 and 50 ft. [3.1, 4.6, 6.1, 7.6, 9.1, 12.2, and 15.2 m]
- Connecting Plug:** 13/16" [20.63 mm] nominal diameter with gold-plated connector pins

Transmitter

- Power Requirement:** 24 VAC (22.8 to 26.4 under load) @20V-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

- GTC116 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
- GTM116 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
- GTL116 Transmitter:** One isolated Lonworks Free Topology network connection
- GTD116 Transmitter:** One USB connection for thumb drive data-logging of sensor node airflow rates and temperatures 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 (GTC116 and GTM116 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 (GTC116 and GTM116 only)
- 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*

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.

² Custom probes are available up to 192 inches. Sensing nodes/probe limitations apply to sizes greater than 120 inches to ensure structural stability of the probe tube and may not meet P+ sensor density rules. Contact factory for more information.