

# HIGH SENSOR DENSITY MULTI-POINT AIRFLOW AND TEMPERATURE MONITORING DEVICE WITH ALARM AND OPTIONAL INTEGRAL HUMIDITY SENSOR



#### TYPICAL APPLICATIONS

- Outdoor airflow monitoring and control
- Advanced CO2-DCV airflow reset and limit control
- Population-based DCV control
- Air change verification and control
- Differential airflow tracking and pressure control
- System performance monitoring
- Economizer switchover and fault detection

#### **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 5,000 FPM calibrated range with percent-ofreading accuracy
- Actual (CFM) or mass (SCFM) airflow measurement
- Velocity-weighted temperature measurement between -20° F to 160° F
- Optional velocity-weighted humidity/enthalpy and dewpoint measurement
- Smart Sensor Detection System (SDS) continuously monitors for sensor and transmitter faults
- Independent test data demonstrates resistance to saltwater and chemical exposure
- Standard FEP plenum rated cable between sensor probes and transmitter
- No compromise construction uses gold plated interconnects
- Unsurpassed connectivity options
- *EB-link* BLE interface to phone or tablet provides realtime monitoring and diagnostics
- Three-year warranty
- Toll-free customer support for the lifetime of the product

### 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 GTx116e-P is EBTRON's top-of-the-line airflow monitoring system that also provides velocity-weighted temperature and optional velocity-weighted psychrometric measurements, thus providing a turn-key solution for today's high-performance buildings. Multiple sensor nodes provide accurate measurements of critical airstream parameters. Unsurpassed connectivity options and a "no-compromise" design makes this your best choice for today's high-performance buildings.



# Advantage IV GOLD SERIES GTx116e-P Overview

### **GTx116e-P TECHNICAL SPECIFICATIONS**

## General

Probe and Sensor Node Configurations (max.) Type A Transmitter: 2 probes x 8 sensor nodes/probe Type B Transmitter: 4 probes x 4 sensor nodes/probe Installed Airflow Accuracy Ducts/Plenums: ±3% of reading Non-ducted OA Intakes: better than or equal to ±5% of reading Sensor Node Averaging Method Airflow: Independent, arithmetic average Temperature: Independent, velocity weighted average Patents US Patent Nos.: 12.066.199: 12.066.205 CA Patent Nos.: 3,069,531; 3,169,641 Listings & Compliance UL: 60730-1; CAN/CSA-E60730-1 CE: Yes UKCA: Yes BACnet International: BTL Listed (GTC116e and GTM116e 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 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** Type: Velocity-weighted average 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] Optional Relative Humidity Sensor (/H Option) Type: Ruggedized capacitive polymer RH sensor Accuracy @ 77 °F [25 °C] 20 to 80 %RH: ±2% RH 0 to 20 and 80 to 100 %RH: ±3.5% RH Temperature Coefficient: 0.07%/ºF [0.13%/ºC]

Long Term Drift: 0.5% RH/year

Calculated Measurements: Velocity weighted relative humidity, velocityweighted enthalpy and dew point using measured RH, velocity-weighted temperature and on-board barometric pressure sensor.

Sensor Probe Assembly Tube Material: Gold anodized 6063 aluminum (316 stainless steel with /SS option) Mounting Brackets Material: 304 stainless steel Mounting Options & Size Limits Insertion: 6 to 191in. [152.4 to 4851 mm] Stand-off: 6 to 190 in. [152.4 to 4826 mm] Internal: 10 to 194 in. [254.0 to 4928 mm] Note: The /H option is only available on probes >18 in.[457.2 mm] **Probe to Transmitter Cables** Type: FEP jacket, plenum rated CMP/FT6/CL2P, UL/cUL listed, -67 to 302 °F [-55 to 150 °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 Transmitter Power Requirement: 24 VAC (22.8 to 26.4 under load) @20V-A max. PCB Connections: Gold-plated 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=%RH, enthalpy or dew point when /H option is provided). GTA116e Transmitter: No additional connectivity to B.A.S. GTC116e 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 GTM116e 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 GTF116e Transmitter: One additional isolated Lonworks Free Topology network connection GTU116e 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 Analog Signal Indication: Yes, on AO2 assignment System Status Alarm Type: Sensor diagnostic system trouble indication Visual Indication: Yes, LCD display Analog Signal Indication: Yes, on AO2 assignment EB-Link Bluetooth® low energy Interface for Android® and iPhone®: Display real-time airflow, velocity-weighted temperature, humidity, enthalpy, dew point, individual sensor node airflow/temperature data, settings and

diagnostics.