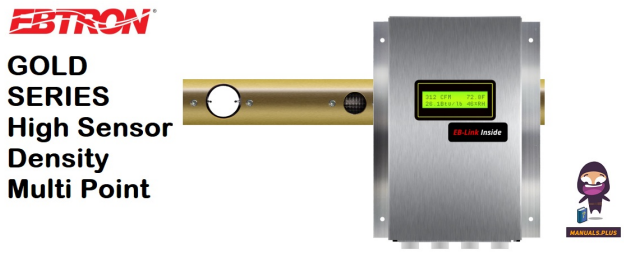
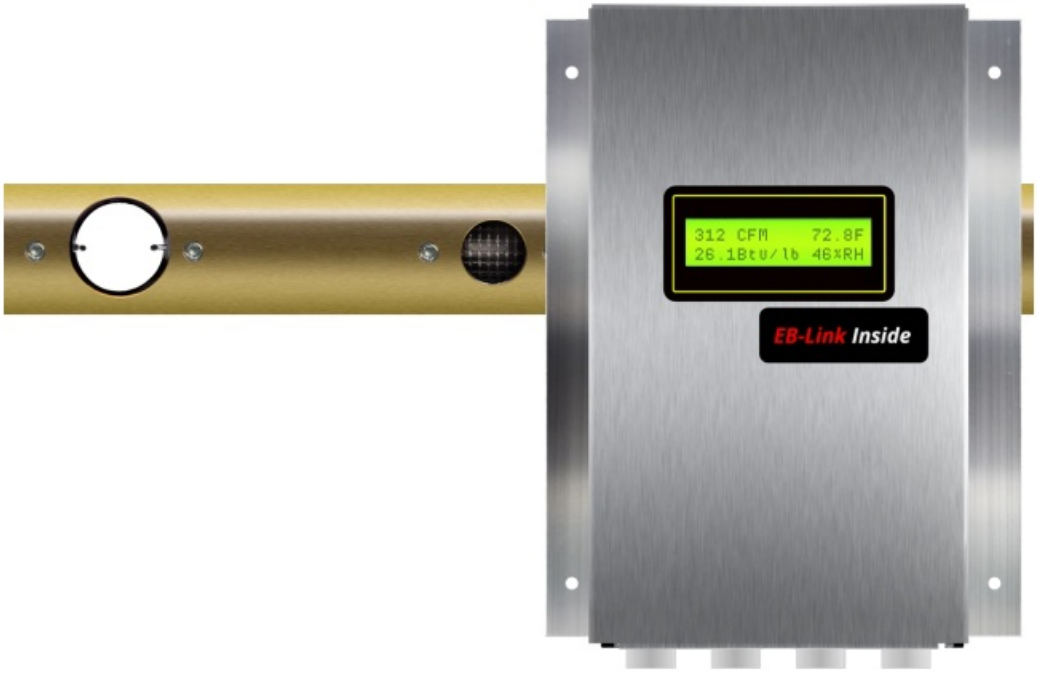


EBTRON GOLD SERIES High Sensor Density Multi Point Airflow Owner's Manual

Contents

EBTRON GOLD SERIES High Sensor Density Multi Point Airflow



Product Usage Instructions

Installation:

1. Choose the appropriate probe and sensor node configuration based on your requirements.
2. Mount the sensor nodes using the provided mounting brackets within the specified size limits.
3. Connect the probe to transmitter cables ensuring proper length and connection.

Powering Up and Configuration:

1. Connect the transmitter to a power source with the required specifications (24 VAC).
2. Utilize the user interface provided (2-line x16-character backlit LCD display and 4-button interface) for configuration.

Data Monitoring and Alarm Setup:

1. Monitor the airflow, temperature, and optional humidity readings displayed on the interface.
2. Set up alarms for critical parameters using the alarm features of the device.

Frequently Asked Questions

Q: What is the maximum temperature range that the probes can handle?

A: The probes can handle temperatures ranging from -20 to 160 F [-28.9 to 71.1 C].

Q: Can I use the device without connecting it to a Building Automation System (B.A.S)?

A: Yes, the device can function independently without being connected to a B.A.S, but connecting it offers additional monitoring and control capabilities.

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-of-reading 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 salt water and chemical exposure
- Standard FEP plenum-rated cable between sensor probes and transmitter
- No compromise construction uses gold-plated interconnects and connector pins
- Unsurpassed connectivity options
- EB-link BLE interface to phone or tablet provides real-time 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.

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
  - **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 ºF [-28.9 to 71.1 ºC]
    - Transmitter: -20 to 120 ºF [-28.9 to 48.9 ºC]
    - 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: ±0.15ºF [0.08 ºC] to NIST-traceable temperature standards (includes transmitter uncertainty)
    - Calibrated Range: -20 to 160 ºF [-28.9 to 71.1 ºC]

- **Optional Relative Humidity Sensor (/H Option)**
  - Type: Ruggedized capacitive polymer RH sensor Accuracy @ 77 ºF [25 ºC] 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 ºF [-55 to 150 ºC], 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 max.
  - **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=%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.

EBTRON, Inc., 1663 HWY 701 South, Loris SC 29569

800-2-EBTRON (1-800-232-8766)

EBTRON.com
sales@ebtron.com

Documents / Resources

	EBTRON GOLD SERIES High Sensor Density Multi Point Airflow [pdf] Owner's Manual GOLD SERIES High Sensor Density Multi Point Airflow, GOLD SERIES, High Sensor Density Multi Point Airflow, Density Multi Point Airflow, Multi Point Airflow, Point Airflow

References

- User Manual