

Power-over-Ethernet (PoE) Airflow and Temperature Measurement with Humidity Capability



TYPICAL INSTALLATION LOCATIONS

- Any Round Air Duct (4-16" dia.)

MONITORING BENEFITS

- Verify Damper Operation
- Confirm Occupied/Unoccupied Mode Ventilation Rates
- Ensure Economizer Operation
- Validate Fan Operation
- Verify Coil Performance
- Detect Filter Loading and/or Failure
- Detect Desiccant Wheel Frosting
- Verify Zone Ventilation Rates

ALARM ABILITIES

- Up to 10 Simultaneous Alarms Configurable per Device
- High and Low Thresholds
- Delay, Tolerance, Zero-Offset Adjustments
- % of Tolerance vs. Actual Measurement
- Manual and Automatic Reset

Product Highlights

- Power-over-Ethernet (PoE) connection using a single Ethernet cable to deliver both power and communication
- Easy to install insertion probe design fits standard 4 to 16 inch round ducts
- Accurate and repeatable thermal dispersion technology with bead-in-glass thermistor sensors
- Sensor nodes are individually calibrated at 7 airflow rates to NIST traceable standards
- 0 to 3,000 FPM calibrated range with percent-of-reading accuracy
- Optional integrated RH sensor for psychrometric measurement data (probe lengths $\geq 9"$)
- FEP plenum-rated cable with terminal DIN connector plug included
- Remote monitoring and access via Vu-IQ™ web interface for configuration, data viewing, diagnostics, and system status alarming

Vu-IQ™ Overview

GreenTrol's Vu-IQ™ ecosystem integrates a family of low-cost, easy to install, Power-over-Ethernet (PoE) sensors designed specifically for monitoring and alarming applications. Each device provides continuous, real-time measurement of airflow, temperature, humidity, CO₂, and other environmental parameters. Data is collected through a resident background application and interface (required) that can be accessed from any browser-based device—allowing users to configure setpoints, trend data, and receive alarm notifications whenever monitored values fall outside defined limits.

LEARN MORE:
VU-IQ™



Product Overview

The TD-POE2000-D is a Power-over-Ethernet (PoE) transmitter with an integrated IAT2-DI duct probe, providing airflow and temperature measurement, with optional humidity, dew point, and enthalpy sensing available on probe lengths ≥ 9 inches, all within a single measurement solution.

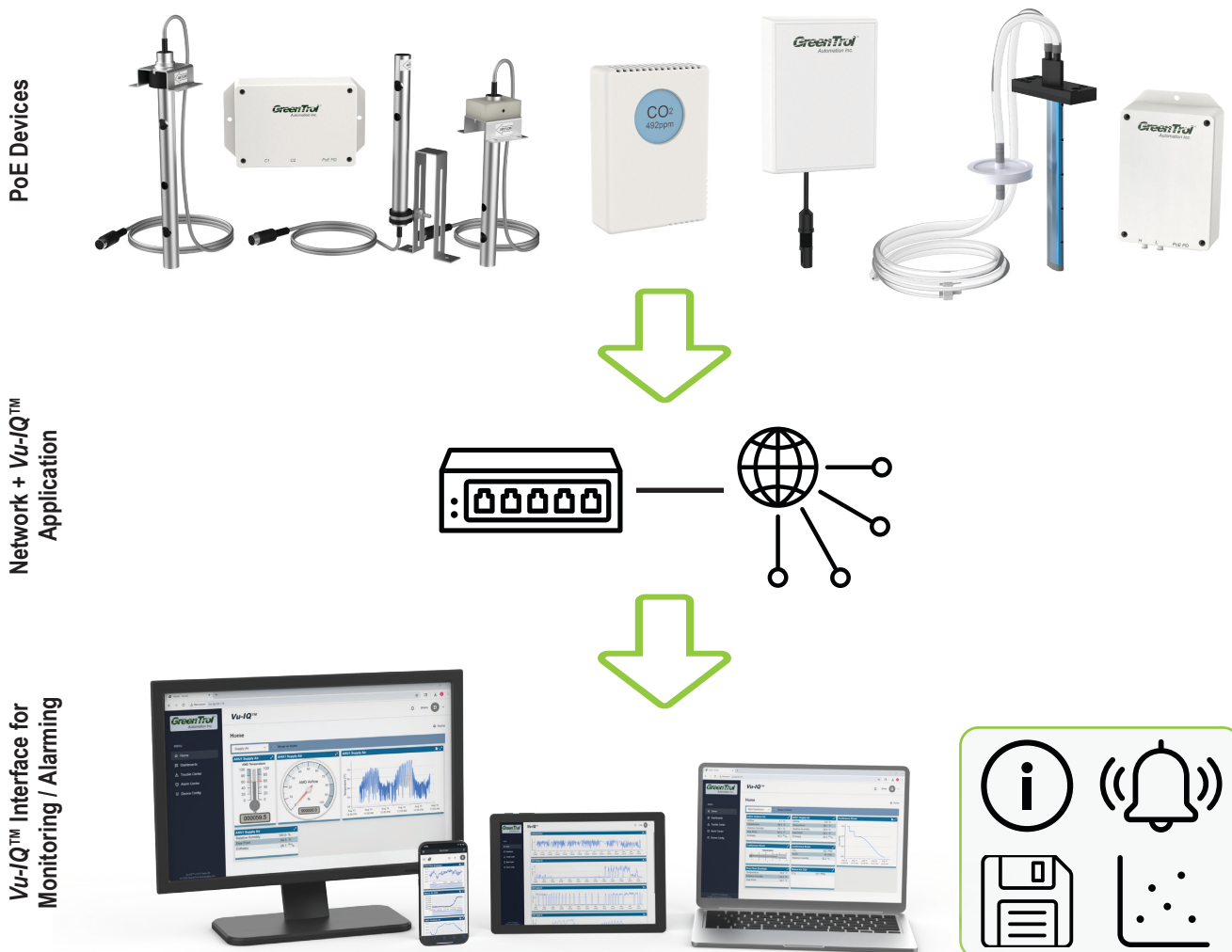
Designed for 4-16" round duct insertion, probes are available with one or two sensing nodes depending on length, with optional enthalpy sensing on lengths ≥ 9 ". Each sensor node contains two hermetically sealed bead-in-glass thermistors, potted in a waterproof assembly. The sensors are designed for long-term stability, drift-free performance, and trouble-free operation. Each probe is calibrated at 7 points in high-performance wind tunnels.

The TD-POE2000-D transmitter communicates over a single Ethernet cable using PoE and a resident background application and interface (required), streamlining installation and complexity by eliminating the need for separate power and data wiring.

An integrated Learn Mode monitors airflow over a user-defined period (up to 7 days) to automatically determine maximum system airflow for accurate scaling when configuring 0–100% Airflow Adjustment Mode in Vu-IQ™.

The TD-POE2000-D is "plug and play" and operates on power up. The user interface for the device is accessed using GreenTrol's Vu-IQ™ web interface, enabling real-time monitoring, data logging, configuration, and diagnostics from any network connected device.

Vu-IQ™ Ecosystem



Technical Specifications

Functionality

Airflow Measurement: Provides the average airflow rate of probe in FPM [m/s] or CFM [LPS] via the Vu-IQ™ web interface.

Temperature Measurement: Provides the velocity weighted temperature in °F [°C] via the Vu-IQ™ web interface.

Relative Humidity (RH) Measurement: Provides RH via the Vu-IQ™ web interface

Enthalpy Calculation: Provides Enthalpy via the Vu-IQ™ web interface

Dew Point Calculation: Provides Dew Point via the Vu-IQ™ web interface

System Status Alarms: Yes, via the Vu-IQ™ web interface. See the Vu-IQ™ web interface data sheet for more details.

Network Connection

Vu-IQ™ with auto setup using CAT5e or newer cable

User Interface

Vu-IQ™ web interface

Airflow / Temperature Measurement Probe

Type: -DI Duct Insertion Mount

Available Configurations

4 inch [102 mm]: 1 probe x 1 sensor node

5 to 16 inch [127 to 406 mm]: 1 probes x 2 sensor nodes

≥9 inch [229 mm]: Optional relative humidity sensor available

Sensing Node Sensors

Self-heated sensor: Precision, hermetically sealed, bead-in-glass thermistor probe

Temperature sensor: Precision, hermetically sealed, bead-in-glass thermistor probe

Probe Tube

Material: Mill finish 6063 aluminum

Probe Mounting Brackets

Material: 304 stainless steel

Sensing Node Housing

Material: Glass-filled Polypropylene

Sensor Potting Materials: Waterproof marine epoxy

Sensing Node Internal Wiring

Material: Kynar® coated copper

Probe to Transmitter Cables

Material: FEP jacket, plenum rated CMP/FT6/CL2P, UL/cUL listed, -67 to 302 °F [-55 to 150 °C], UV tolerant

Standard Lengths: 3, 10, 25 and 50 ft. [0.91, 3.1, 7.6 and 15.2 m]

Connecting Plug: 0.60" [15.24 mm] nominal diameter

Airflow Measurement

Sensor Accuracy: ±3% of reading to NIST-traceable airflow standards

Averaging Method: Independent, arithmetic average

Installed Accuracy: Better than ±4% of reading to NIST traceable airflow standards

Calibrated Range: 0 to 3,000 fpm [0 to 10.16 m/s]

Calibration Points: 7

Temperature Measurement

Averaging Method: Independent, velocity weighted

Accuracy: ±0.15°F [0.08°C]

Optional Relative Humidity Sensor (/H Option)

Type: Ruggedized capacitive polymer RH sensor

Operating Range: 0-99% RH, non-condensing

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%/°F [0.13%/°C]

Long Term Drift: 0.5% RH/year

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

Environmental Limits & Power Requirements & Dimensions

Transmitter

Environmental Limits

Temperature: -20 to 120°F [-28.9 to 48.9°C]

Humidity: 0 to 99% RH, non-condensing

Important: Provide a weather-proof enclosure if the transmitter module is mounted outdoors

Power Requirement

Power-over-Ethernet (PoE)

Wattage: 4W

PoE Standards Supported: IEEE 802.3af, 802.3at

Dimensions: 3.57H x 6.00W x 1.50D in. [90.7 x 152.4 x 38.1 mm]

Probe

Environmental Limits

Temperature: -20 to 160°F [-28.9 to 71.1°C] Note:

Temperature limits for operation may be limited by the transmitter

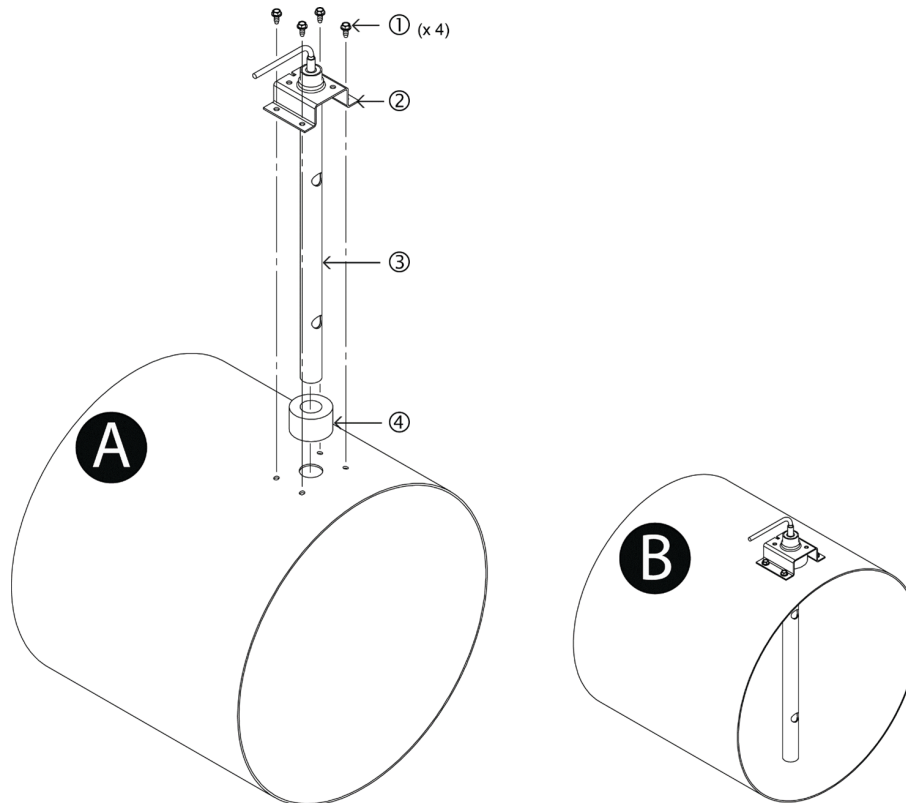
Humidity: 0 to 100% RH

Power Requirement: Power is provided by the transmitter

Sensor Probe Installation Diagrams

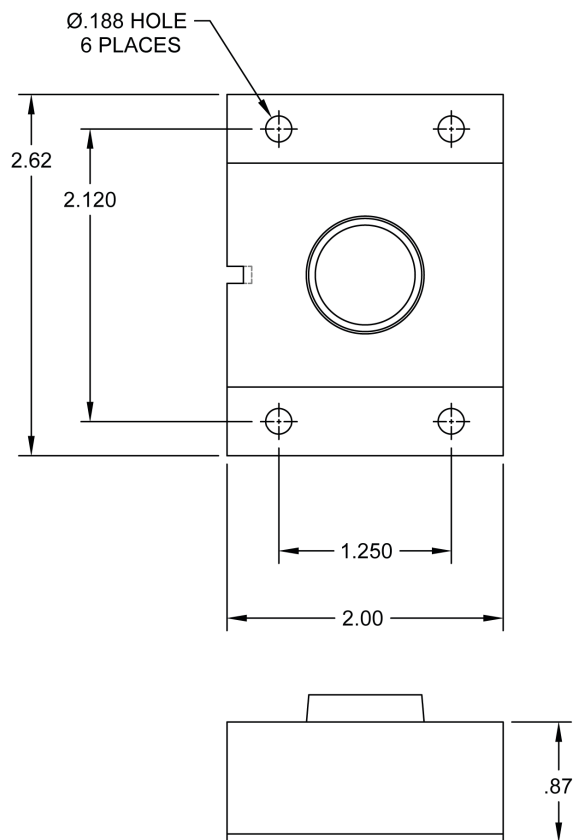
Detailed installation guidelines for probes are provided in the Greentrol -DI probe installation guide.

-DI Probe Installation (Insertion Mounting - Round Ducts)



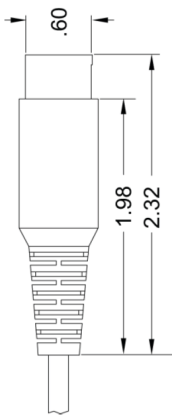
Sensor Probe Mounting Bracket Dimensions

Insertion Mounting Bracket



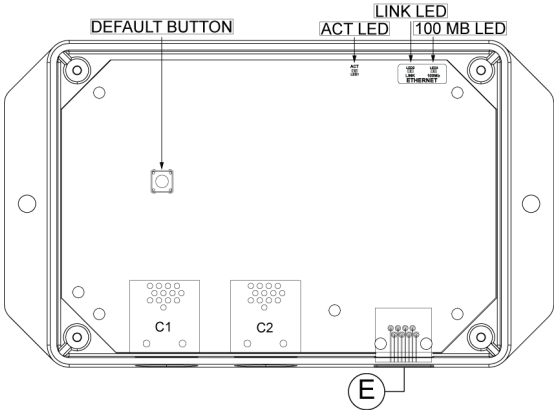
Wiring and PoE Connection

Detailed wiring and connection guidelines are provided in the TD-POE2000-D installation guide.



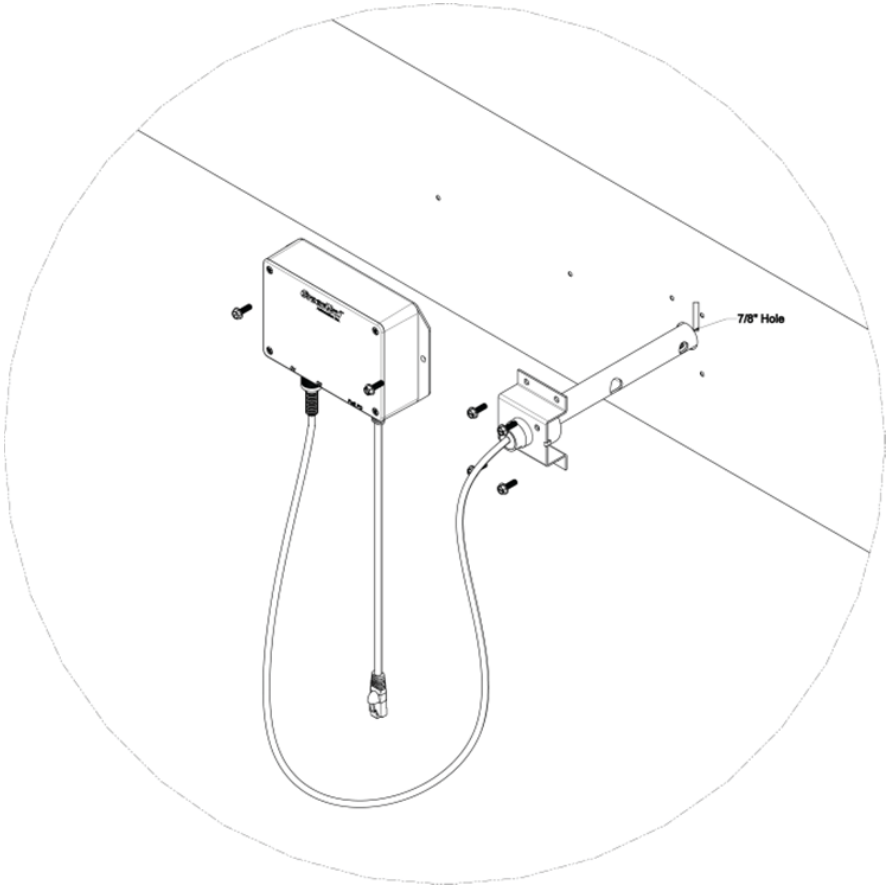
 **Push in keyed connector plugs (sensor data is stored in serial memory chip in connector plug). DO NOT TWIST!**

 Cables have an FEP plenum rated jacket that are UV tolerant and suitable for operation over the entire operating temperature range of the device.

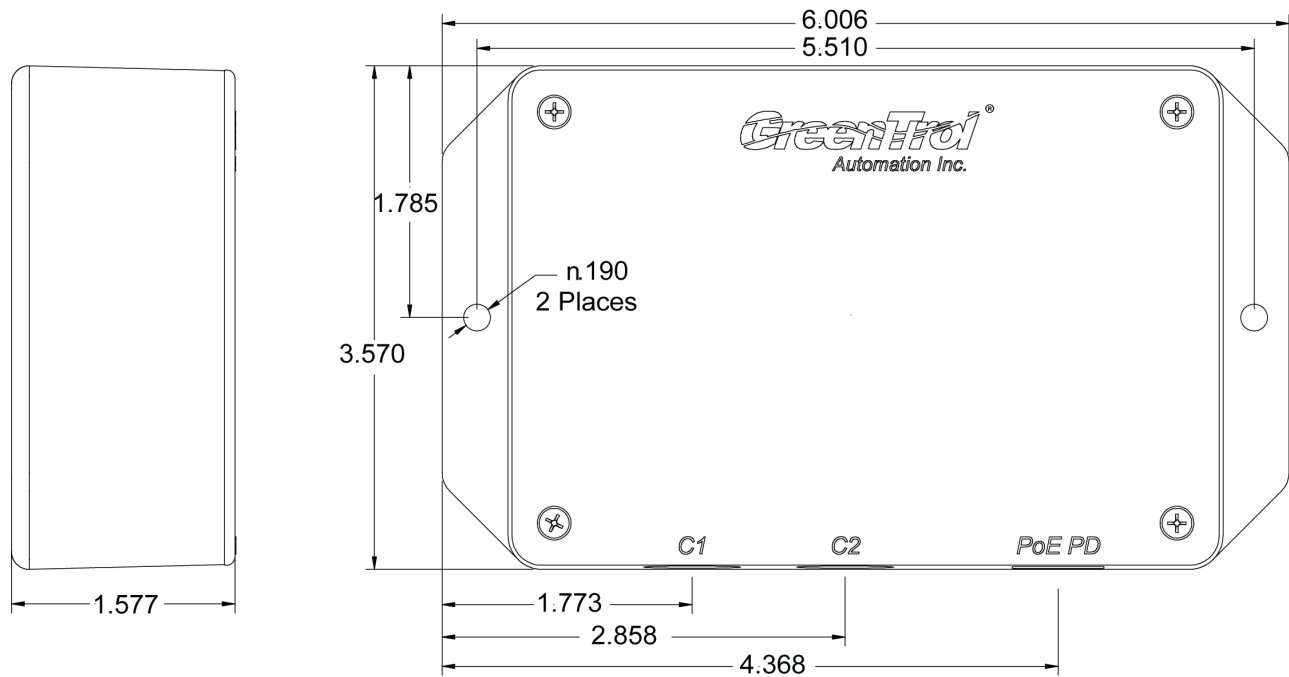


TD-POE2000-D CONNECTIONS

Power Over Ethernet	Connector	
	C1	C2
RJ-45 CAT5 or Greater	1 probe x 2 sensors/probe	Not Used



Transmitter Enclosure Dimensions



Note: All dimensions listed in inches

Quotations and Ordering

Use the model code below to request a quote or place an order. Quotations and orders are provided by your local GreenTrol representative.

TD - POE 2 1 0 - DI - - /

