

# the Eliminator™ Product Data Sheet

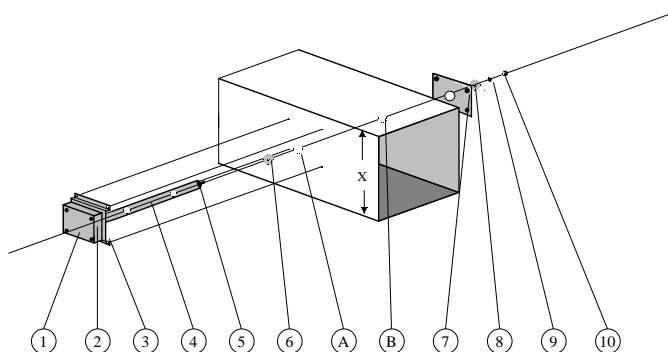
The Eliminator 3000 is a self-powered, stand-alone instrument, designed for simple insertion into a duct. This highly accurate Thermal Anemometer is factory calibrated and provides the user with a linear output signal for both air velocity and temperature. When combined with intelligent DDC systems, the Eliminator affords the engineer and building manager a cost effective tool for the accurate and reliable control necessary to meet the requirements of today's air distribution systems. Maintenance free and easy to install.

**Effective and Economical Measurement For:**

- Economy Fan Tracking
- High Performance VAV Box Measurement
- Laboratory & Clean Room Pressurization Control
- Direct Measurement of Outdoor Air Intake Flow Rates (outside air temperatures greater than 20° F and less than 1500 FPM)

**Features:**

- Microprocessor based electronics with “watchdog” timer circuitry to assure continuous operation after power resets and brownouts
- Low flow sensitivity, measures from 0 ft/min
- Each sensing point is independent
- True average velocity & temperature output
- Temperature compensated velocity output
- 1:1 isolation transformer assures a “floating” output to host control interface
- Optional offset/span allows for field adjustment



**General Construction & Features**

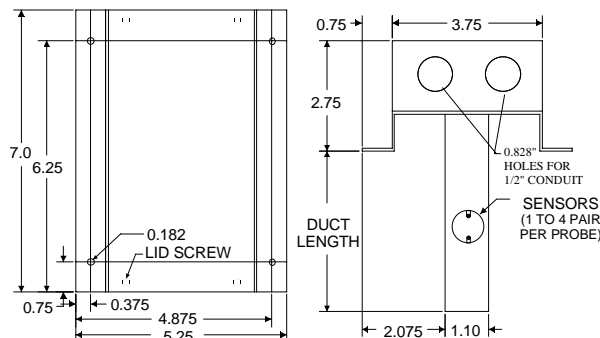
PERFORMANCE		
Sensor Accuracy - Velocity		+/-2% of Reading
Sensor Accuracy - Temperature	typ.	0.18° F
	max.	0.36° F
Output Resolution		0.4% of F.S.
OUTPUT SIGNAL		
Velocity & Temperature	std.	linear 0-5 VDC
	opt.	linear 4-20mA
OUTPUT SCALING		
Velocity	std.	0-500 ft/min
		0-1000 ft/min
		0-2500 ft/min
		0-5000 ft/min
Temperature	opt.	Custom when ordered
		0°-100° F
opt.	Custom when ordered	
POWER REQUIREMENT		
AC Power Input		24 VAC @ < 10 VA +/- 10%
OPERATING RANGES		
Operating Temperature Range [0-5000 fpm]		30° to 160° F
Operating Temperature Range [0-1500 fpm]		20° to 160° F
Operating Humidity Range		0 to 99% RH
PRESSURE DROP		
Pressure Drop @ 2000 ft/min	max.	0.005 in w.g.
CONSTRUCTION		
Sensors per Probe		1 to 4
Probe Enclosure	std.	Aluminum 5052
	opt.	NEMA 4 304 Stainless Steel
Probe Body	std.	Aluminum 6063 T52
	opt.	316 Stainless Steel
Sensor Housing	std.	Glass Filled Polypropylene
	opt.	Kynar
Flow Sensor		Instrument Grade Thermistor
Temperature Sensor		Instrument Grade Thermistor

**Mechanical Construction**

- **Enclosure and cover [1 and 2]:** Stamped, 0.04", 5052 alloy sheet, aluminum, non rated enclosure, access for two (2) 1/2" conduit connections
- **External Support Bracket [3]:** Extruded, 6063 alloy, aluminum
- **Support Struts [4]:** Extruded tubular, 6061 alloy, aluminum; 1.1" O.D.
- **Terminal Mounting Stud (probes ≥ 18") [5]:** 3/8"x 16, zinc plate, steel
- **Insertion Side Gasket [6]:** Neoprene Rubber
- **External Support Bracket [7]** Stamped, 0.04", 5052 alloy, aluminum sheet
- **Terminal Side Gasket (probes ≥ 18") [8]:** Neoprene Rubber
- **Fender Washer (probes ≥ 18") [9]:** Zinc plate, steel
- **Lock Nut (probes ≥ 18") [10]:** Nickel plate, steel

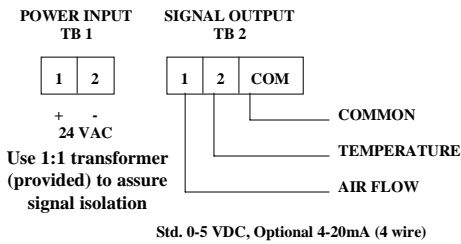
**Sensor Construction**

- **Heated Velocity Sensor:** glass encapsulated, hermetically sealed, industrial thermistor probe.
- **Temperature Sensor:** glass encapsulated, hermetically sealed, industrial thermistor probe
- **Sensor Housing:** Glass Filled Polypropylene
- **Sensor Assembly Compounds:** epoxy
- **Internal Wiring:** Kynar® coated copper

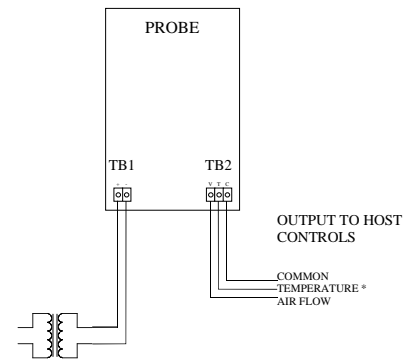


NOTE: 3/8" X 1.5" THREADED ROD EXTENDS FROM END WHEN UNIT IS 18" OR LONGER

## Wiring



Model	VA
3110	6.6
3120	7.3
3130	7.9
3140	8.6



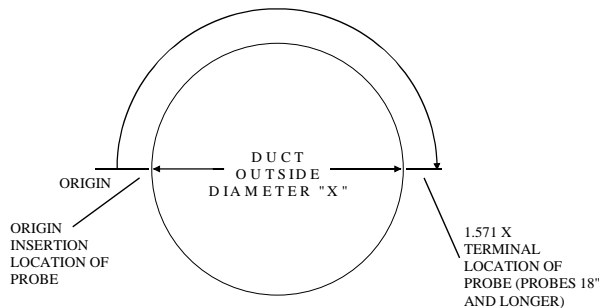
**24 VAC ONLY**

TERMINAL CONNECTIONS

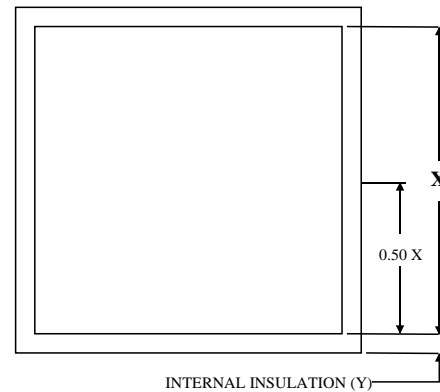
POWER REQUIREMENTS

WIRING SCHEMATIC

## Installation



INSTALLATION IN ROUND DUCTS



INSTALLATION IN RECTANGULAR DUCTS

## Suggested Engineers Guide Specification

Insert under the airflow measurement heading in the Temperature Control Section of the Specification [optionally, 3000 sensors can also appear in the AHU section of the specification]

### A. Manufacturer

1. Base Bid: **EBTRON** Inc., Model 3000

B. Air Flow and Temperature Measurement: Thermal anemometer using instrument grade self heated thermistor sensors with thermistor temperature sensors. Flow measurement drift shall not exceed Manufacturers repeatability statement for the life of the equipment. Manufacturer shall provide test data for accuracy performance prior to bid date. Vortex shedding arrays are not acceptable. Pitot tube and differential pressure sensing arrays are not acceptable. Sensors requiring auto-zeroing are not acceptable.

1. **EBTRON** Model 3000 Duct Mounted Sensor

a) Flow Station Construction

(1) Type: Duct Mounted

(2) Sensors : One glass encapsulated self heated thermistor and one glass encapsulated thermistor temperature sensor for each sensing point.

(3) Sensor Housing: Noryl EN265 [option for corrosive environments, insert: Kynar]

(4) Sensors per probe: 1 to 4

(5) Support Struts: Tubular Aluminum extrusion 6063-T6 [option for corrosive environments, insert: 316 Stainless Steel]

(6) Supporting Bracket: Aluminum extrusion 6063-T52 [option for corrosive

environments, insert 304 Stainless Steel]

b) Electronics

(1) Type: Microprocessor Based, totally solid state.

(2) Power Requirement: 24 VAC. probes wired from a single transformer must be wired in phase.

(3) Enclosure: Aluminum, indoor use only. [option, insert: NEMA 4, outdoor use][option for corrosive environments, insert: 304 Stainless Steel]

c) Performance

(1) Electronics temperature range: 30 to 160 F

(2) Flow station temperature range: 30 to 160 F (velocity up to 5000 FPM)

Flow station temperature range: 20 to 160 F (velocity <1500 FPM)

(3) Flow station velocity range: 0 to 5,000 ft./min.

(4) Flow station pressure drop: less than 0.005 in. w.g.wc @ 2000 ft./min

(5) Flow station humidity range: 0 to 99% RH (non-condensing)

(6) Analog output signals: 0-5VDC [option 4-20mA, 4-wire]

(a) Sensor velocity accuracy: +/-2% reading

(b) Sensor temperature accuracy: typ. 0.18 F, max. 0.36 F

(c) Type: linear

(d) Repeatability: +/- 0.2% scale

(e) Resolution: 0.4% scale

d) Warranty

(1) 36 months from shipment, parts and factory labor as described in the Company's Standard Terms & Conditions of Sale

## Ordering Information

3 1 a b - c x d e - f - g - h i j

a- Sensors per Probe: 1 to 4

b- Adjustable airflow output: 0=no, 1\*=yes

c- Probe Length (inches)

d- Insertion Side Width of Duct (inches)

e- Internal Insulation (inches, each side of duct)

f- Shape and Material: 1=alum. rect., 2=alum. rnd.,

3=alum. oval, 4=SS rect., 5=SS rnd., 6=SS oval

g- Input Power: 1=24 VAC, 2=110 VAC

h- Output Signals: 1=0-5 VDC airflow & temp., 3\*=4-20 mA airflow & 0-5 VDC temp., 4\*=4-20mA airflow & temp.

i- Airflow Signal Range, 0 to: 1=500 FPM, 2=1000 FPM, 3=2500 FPM, 4=5000 FPM, 6=Custom FPM, 7=Custom CFM

j- Temperature Signal Range: 1=30°-80°F, 2=Custom °F, 3=Custom °C

\* *Optional configuration, may require additional charges*

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