AIR FLOW MEASUREMENT FOR FAN INLETS **(X)F000 Models**

IAQ ENFORCER ™ Product Data Sheet

Model-F air flow/temperature sensing satellites are designed to be mounted directly in the inlet of either single or dual inlet centrifugal and vane axial fans. The unique sensing design resulting from ***EBTRON's*** adjustable mounting brackets makes ordering and installation easier than any competitive product. Thermal, temperature compensated, thermistor sensing insures high sensitivity throughout the sensing range and with no orifices to clog or foul. The user can be assured long term, maintenance free operation. The microprocessor based electronics uses high quality **industrial grade** components. In addition, there is no measurable loss of fan performance or increase in fan sound levels with the sensors mounted in the inlet like competitive inlet sensors.

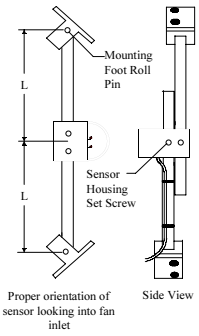
Fan Bell Housing for Illustration Only

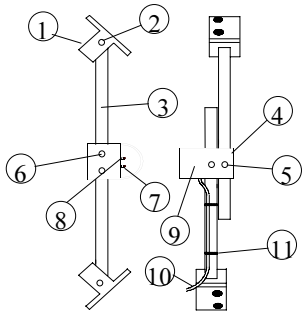
Effective and Economical Measurement for:

- Fan Tracking

Features:

- Microprocessor based electronics
- Each sensing point is independent
- True average velocity & temperature output
- Temperature compensated velocity output
- Maintenance free design
- Easy to handle and install
- Linear, Repeatable Output Signal
- Streamline Design





General Construction & Features

PERFORMANCE			
	Sensor Accuracy - Velocity	Linearity	+-2% of Reading
		Turndown	Infinite
	Sensor Accuracy - Temperature	typ.	0.18° F
		max.	0.36 °F
OUTPUT SCALING			
	Velocity	std.	0-500 ft/min
			0-1000 ft/min
			0-2500 ft/min
			0-5000 ft/min
			0-10000 ft/min
		opt.	Custom when ordered
	Temperature		30º-80º F
			Custom when ordered
OPERATING RANGES - SENSOR			
	Operating Temperature Range		30° to 160° F
	Operating Humidity Range		0 to 99% RH
OPERATING RANGES - ELECTRONICS			
	Operating Temperature Range		-20° to 160° F
	Operating Humidity Range		0 to 99% RH
ELECTRICAL CONNECTIONS			
	Fan Inlet Sensor to Satellite	std.	10 ft. Plenum Rated
	Electronics	opt. max.	25 ft. Plenum Rated
	Between F Series Satellites	cable	See 'Wire Selection' Tables
		termination	Terminal Block
	SPC Panel or Remote X-Head	std. cable	See 'Wire Selection' Tables
	to F Series Satellites	termination	Terminal Block
CONSTRUCTION			
	Sensors per Inlet		2
	Maximum Inlets per Transmitter		2
	Sensor Housing & Mounting Feet		Nylon
	Mounting Bracket		Steel
	Enclosure		Aluminum Sheet & Extrusion
	Flow Sensor		Instrument Grade Thermistor
	Temperature Sensor		Instrument Grade Thermistor

Mechanical Construction

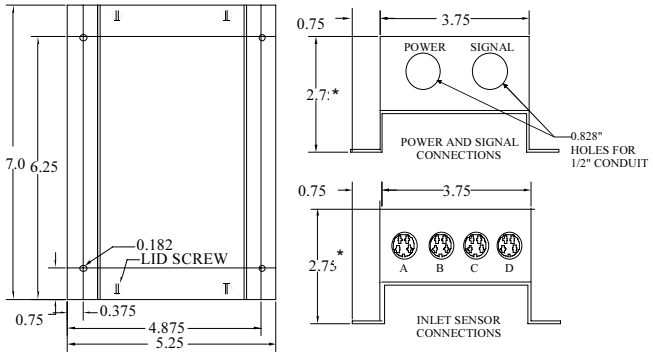
- **Enclosure and cover [not shown]:** Stamped, 0.04", 5052 alloy sheet & 6063-T52 extruded aluminum, non rated enclosure, access for two (2) 1/2" conduit
- **Sensor Assembly Mounting Foot [1]:** Nylon 101
- **Mounting Foot Support Pin [2]:** 1/8" x 3/4" steel roll pins
- **Sensor Assembly Support Rod [3]:** solid round 5/16", nickel plate, steel
- **Sensor Housing Support Block [4]:**Machined 3/4" x 1" x 1" steel block
- **Sensor Housing Set Screws [5]:** 10-32-1/4", steel
- **Sensor Mounting Screws [6]:**4-40-3/4", steel alloy

Sensor Construction

- **Heated Velocity Sensor[7]:** glass encapsulated, hermetically sealed, instrument grade thermistor probe
- **Temperature Sensor [8]:** 316 stainless steel encapsulated thermistor chip
- **Sensor Housing [9]:**Nylon 101
- **Assembly Compounds:**epoxy

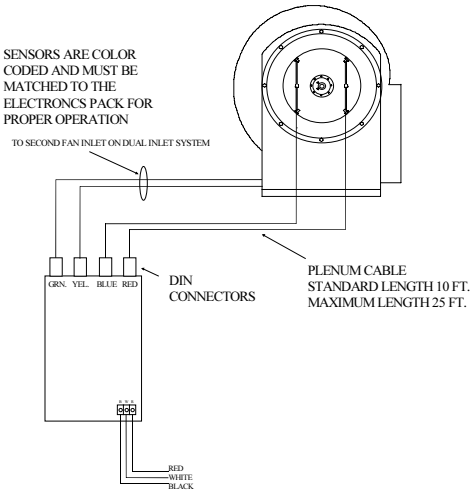
Cable Assembly

- **Cable [10]:**4 conductor, plenum rated, NEC type CL2P
- **Cable Ties [11]:**Nylon tie wrap
- **Terminal Connectors at Electronics Enclosure:** Standard DIN Connectors



* 3.50 inches with integral "X" head electronics installed

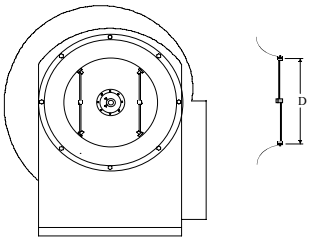
Wiring



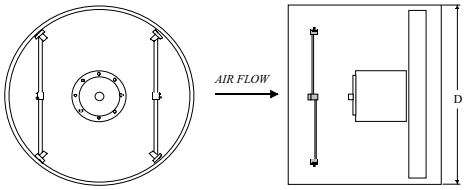
NOTES:

1. CONNECT LIKE COLORS FROM EACH SATELLITE TERMINAL TO THE EQUIVALENT COLOR CODED TERMINAL ON EITHER THE IAQ ENFORCER SPC PANEL OR "X" HEAD ELECTRONICS (SINGLE SATELLITE SYSTEMS WITH INTEGRAL X-HEAD ELECTRONICS ARE PREWIRED AT THE FACTORY).
2. USE 3 CONDUCTOR CABLE, SHIELDING IS NOT REQUIRED BETWEEN SATELLITES.
3. CHECK THE SPC OR "X" HEAD *INSTALLATION GUIDES* FOR WIRE GAUGE SELECTION AND TO DETERMINE MAXIMUM WIRE LENGTHS FOR EACH SINGLE RUN OR "DAISY CHAIN".

Installation



CENTRIFUGAL FANS



VANE AXIAL FANS

Suggested Engineers Guide Specification

A. & B. Insert appropriate specification from product data sheet for either the IAQ Enforcer SPC Panel or "X"-Head electronics.
C. Air Flow and Temperature Measurement:
1. ***EBTRON*** Model-F Fan Inlet Satellite Sensor
a) Flow Station Construction
(1) Type: Fan Inlet
(2) Sensors : One glass encapsulated self heated thermistor and one 316 stainless steel encapsulated temperature sensor for each sensing point.
(3) Sensor Housing: Nylon
(4) Sensors per inlet:
(a) 2 sensors
(5) Support Struts: Steel, Adjustable to fit fan inlet
(6) Supporting Brackets: Nylon
b) Electronics
(1) Type: Microprocessor based, totally solid state, industrial grade integrated circuits.
(2) Connecting Cable Flow Sensor to Electronics: Plenum Rated, NEC Type CL2P
(3) Electrical Connections Electronics to IAQ Enforcer Panel: 3 conductor, provided by others.
(4) Enclosure: Aluminum, indoor use only. [option, insert: NEMA 4, outdoor use]
c) Performance
(1) Electronics temperature range: -20 to 160 F
(2) Flow station temperature range: -20 to 160 F
(3) Flow station velocity range: 0 to 10,000 ft./min.
(4) Flow station humidity range: 0 to 99% RH (non-condensing)
(5) Digital Output Signals to Sensor Signal Processor:
(a) Sensor velocity linearity: +-2% reading
(b) Sensor temperature accuracy: typ. 0.18 F, max. 0.36 F

Ordering Information

F	a	2	b	-	c	-	d	-	e	f	g

a- Number of fan inlets
b- use table

Inlet Diameter		
is greater than or equal to	and is less than	Order Code "b"
11	14	1
14	17	2
17	29	3
29	43	4
43	57	5
57	86	6

c- Inlet diameter
d- Cable length: 10 ft., 11 to 25 ft.*
e- Output Signal(s): 1=0-5 VDC 2=0-10 VDC., 3*=4-20 mA
f- Airflow Signal Range, 0 to: 0=none, 1=500 FPM, 2=1000 FPM, 3=2500 FPM, 4=5000 FPM, 6=Custom FPM,
g- Temperature Signal Range: 0=none,1*=30º-80ºF, 2*=Custom ºF, 3*=Custom ºC
* Optional configuration, may require additional charges

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