IAQ ENFORCER™ Product Data Sheet
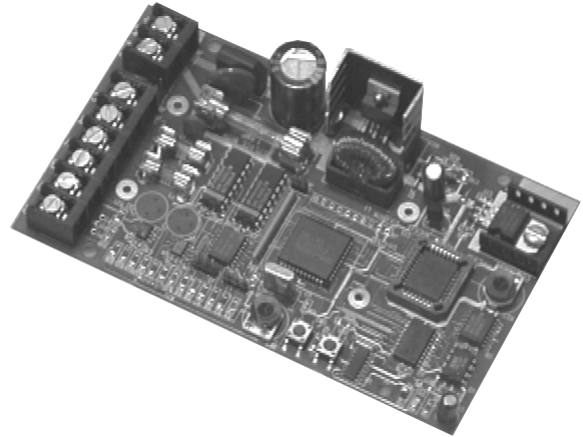
The "X"-Head satellite *eXtension* board is designed to allow **EBTRON** *IAQ Enforcer* satellite sensors to be daisy chained. When used with multiple satellite boards, the "X"-Head allows for simple field wiring and superior performance. The "X"-Head and satellite sensors use industrial grade components and can withstand temperatures down to -20º Fahrenheit.

Use with IAQ Enforcer Satellite Sensors to:
- Measure Supply, Return, or Exhaust airflow rates
- Limit your IAQ liability by **directly measuring outside airflow rates.**
- Use with **EBTRON** *BDB* sensors to control dampers or maintain positive or negative pressures between spaces.
- Use with **EBTRON** temperature sensor probes (or combination airflow/temperature probes) to accurately measure discharge air or mixed air temperatures.
- Provide airflow measurement for the control of laboratory and clean room airflow and pressurization.

Features:
- Power and signal connections are wired only to the X-Head board.
- Simple 3 conductor "daisy chained" wiring bus to multiple sensor probes at a single location results in significant installation cost savings.
- Adjustable digital filter eliminates transient wind effects on outside air intakes and unwanted "noise" in duct systems or on fan intlets for improved system control.
- Adjustable full scale and output gain using push button digital technology allows for simple field adjustment.
- Includes 2 analog outputs for multiple output satellite devices such as **EBTRON** airflow/temperature sensing probes.
- 1:1 isolation transformer assures a "floating" output to host control interface. Input and output terminals are fused for added protection.

General Construction & Features

DISPLAY		
Display (optional)		16 character LCD
SATELLITE SENSOR INPUT		
Maximum Satellites per X-Head		4
Maximum Sensors per X-Head		16
OUTPUT SIGNAL		
Analog Outputs	std.	0-5 VDC
	opt.	0-10 VDC
		4-20 mA
Output Resolution		0.4% of F.S.
Measurement Options	XD000	Airflow and Temperature
	XP000	Airflow and Temperature
	XF000	Airflow and Temperature
	XBDBD	Diff. Airflow and Pressure
	XT00D	Temperature
	XT00P	Temperature
Output Scaling		Defined at Order Entry
POWER REQUIREMENT		
AC Power Input		24 VAC
OPERATING RANGES		
Operating Temperature Range		-20° to 160° F
Operating Humidity Range		0 to 99% RH
CONSTRUCTION		
X-Head Processor and Optional Remote Display Mounting	std.	"Piggy Backed" on Satellite Board
	opt.	Remote Enclosure
Enclosure	std.	Aluminum (indoor use)
	opt.	304 Stainless Steel (indoor use)
		NEMA 4

Use XBDB sensors to maintain constant positive pressure across relief air dampers and assure positive relief airflow.
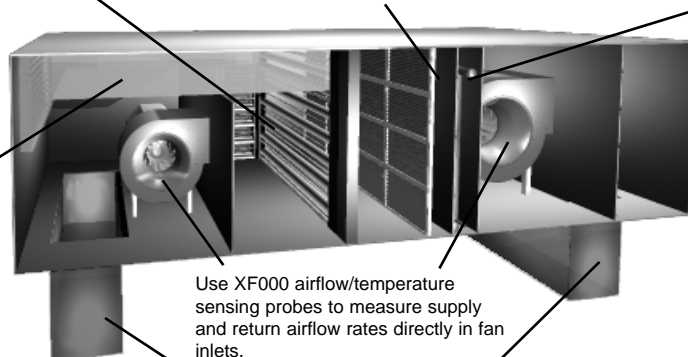
Use XD000 or XP000 airflow/temperature sensing probes to measure supply airflow rates downstream of filters.

Use XD000 or XP000 airflow/temperature sensing probes to measure supply airflow rates downstream of coils. Precise temperature measurement will improve discharge air temperature control and reduce energy costs.

Use XD000 or XP000 airflow/temperature sensing probes to directly measure outside air intake flow rates.
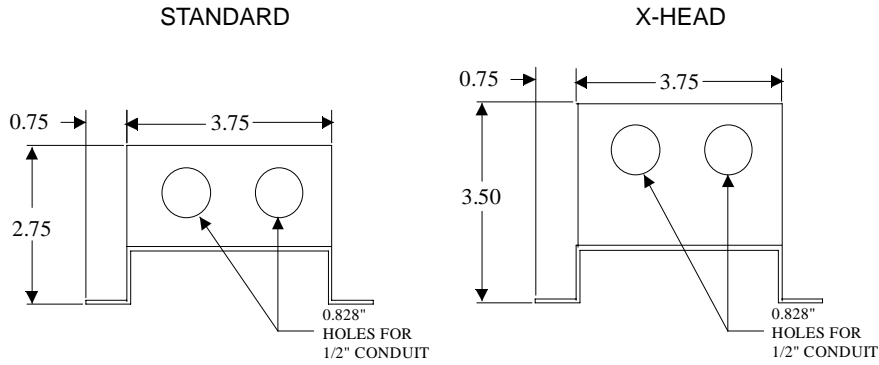
Use XF000 airflow/temperature sensing probes to measure supply and return airflow rates directly in fan inlets.

Use XD000 airflow/temperature sensing probes to directly measure ducted supply and return airflow rates for fan tracking.
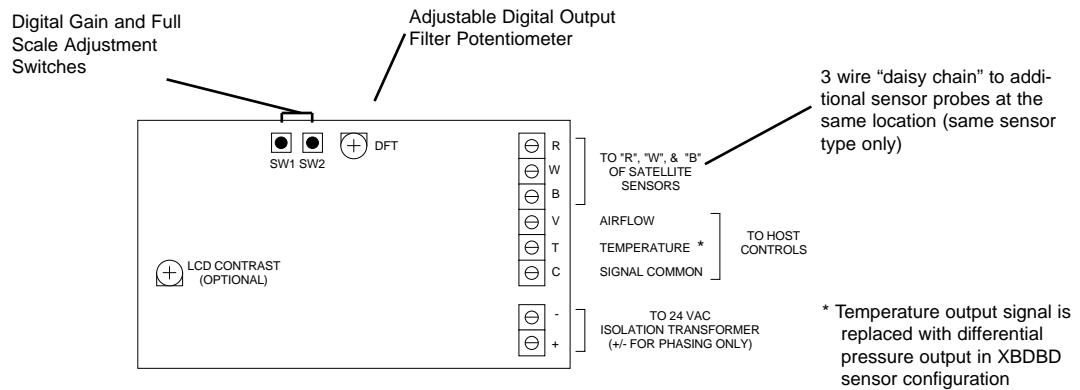
DIMENSIONS

The X-Head board increases the height of the standard enclosure by 0.75 inches as illustrated in the figures below. For additional dimensions of a particular sensor, refer to the data sheet for that sensor.

STANDARD

X-HEAD

0.75

3.75

0.75

2.75

0.828"
HOLES FOR
1/2" CONDUIT

0.75

3.75

3.50

0.828"
HOLES FOR
1/2" CONDUIT

WIRING

Digital Gain and Full
Scale Adjustment
Switches

Adjustable Digital Output
Filter Potentiometer

3 wire "daisy chain" to additional sensor probes at the same location (same sensor type only)

DFT

SW1 SW2

LCD CONTRAST
(OPTIONAL)

R
W
B
V
T
C

TO "R", "W", & "B"
OF SATELLITE
SENSORS

AIRFLOW

TEMPERATURE *

SIGNAL COMMON

TO HOST
CONTROLS

-
+

TO 24 VAC
ISOLATION TRANSFORMER
(+/- FOR PHASING ONLY)

* Temperature output signal is replaced with differential pressure output in XBDBD sensor configuration

Suggested Engineers Guide Specification

Insert under the following headings, depending on the satellite sensors used, in the Temperature Control Section of the Specification [optionally, X-Head sensors can also appear in the AHU section of the specification]: Air Flow Measurement, Bidirectional Bleed Sensors, Temperature Measurement

A. General: Provide electronic measuring devices to measure [insert one or more of the following: airflow rates, bidirectional airflow (differential pressure) and/or temperature]. Multiple sensor electronics at a single location will be connected by a 3-conductor, non shielded cable.
1. Base Bid: **EBTRON** Inc., X-Head Sensor System
B. X-Head Processor
1. Electronics: Microprocessor Based, totally solid state
2. Display: 16 character, alpha numeric
3. Analog Outputs: 0-5 or 0-10 VDC, 4-20 mA, 0.4% F.S. resolution
4. Power Requirement: 24 VAC, isolated from other devices and not grounded. Multiple X-Head systems wired from a single transformer must be wired in phase.
5. Operating Ranges:
a) Temperature: -20 to 160 F
b) Humidity: 0-99% RH

6. User Programmable Options:
a) Field adjustable digital scaling
b) Field adjustable gain adjustment
c) Field adjustable digital output filter
7. Diagnostics: Complete sensor hardware
8. Power Loss and Brown-out Protection:
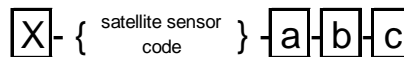a) Microprocessor continuously reset by watchdog timer circuit
C. Sensors:
1. **EBTRON** IAQ Enforcer satellite sensor, insert appropriate specification from product data sheet based on application
D. Warranty
1. 36 months from shipment, parts and factory labor as described in the Company's Standard Terms & Conditions of Sale

Ordering Information

X - { satellite sensor code } - a - b - c

a- Input Power: 1=24 VAC, 2=110 VAC
b- Remote X-Head Panel: 0=no, 1*=yes
c- LCD Display: 0=no, 1*=yes

* Optional configuration, may require additional charges