

Air Flow Sensor

Description

Air flow sensor is applicable to all kinds of building automation, environment monitoring, HVAC systems. Product appearance is simple, direct connection terminals, convenient installation. Products use high performance embedded microprocessor, and high-precision sensors to meet all kinds of high precision, high stability of the measurement requirements, and variety needs of different environment. Air flow sensor has current, voltage, 485 output signal to select, using 485 serial port output and Modbus communication protocol. It is commonly used in HVAC, electrical plant, environment monitoring, dynamic environment monitoring, agricultural environmental monitoring, meteorological environmental monitoring, environmental monitoring of biological pharmacy, airport, subway stations, hotel, museum, stadium, etc.



AFS-150

Highlights

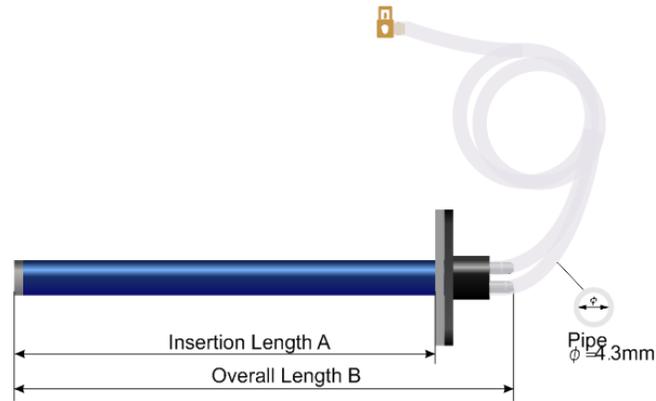
- High precision pressure sensor
- HVAC systems
- Advanced circuit design, high accuracy, stable performance
- Appearance is concise, easy to install, cost-effective
- Sensor with active output
- Programmable measuring range control output and fan manufacturer fan characteristic
- Professional and practical product design withstands rough environmental conditions
- Support Modbus and Bacnet protocols
- Easy to configure air flow in CFM, m³/Hr, and other engineering units

Specifications

Typical Application	Duct mount indoors
Output Signal	Supports 4-20mA and 0-10V (default)
Output Signal Drive	> 500Ω for mA mode, 75mA, max output drive for voltage mode
Power	15-24V +/- 10% AC or DC, 1 Watt typical
Operating Temp	-30-60°C, 0-95% non condensing
Plastic Housing	Flammability rating UL 94V0 file E194560
Size	72.2mm X 64mm X 38.4mm

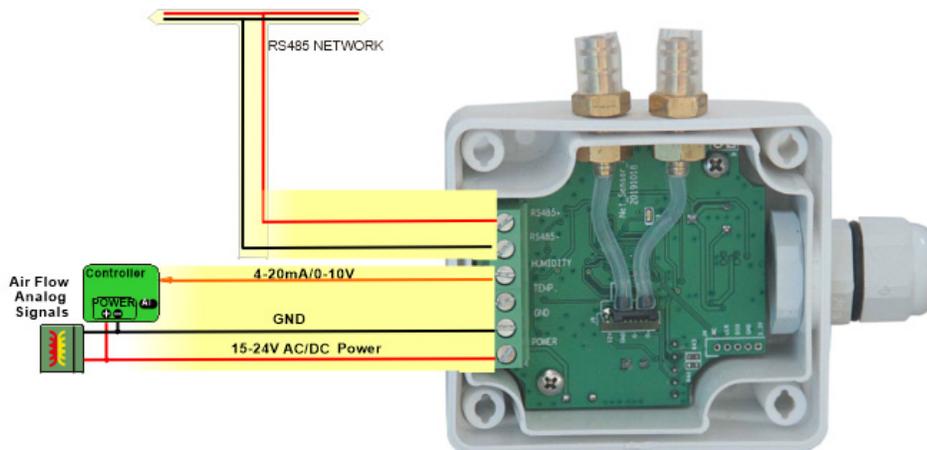
Pressure	Measurement range	- 1500 to + 1500 Pa (-6 to 6 inches H ₂ O)
	Zero point accuracy	0.2 Pa
	Span accuracy	3% of reading (- 500 to + 500 Pa), 6% of reading (- 1500 to + 1500 Pa)
	Zero point repeatability	0.1 Pa
	Span repeatability	0.5% of reading (- 500 to + 500 Pa), 3% of reading (- 1500 to + 1500 Pa)
	Span shift due to temperature variation	< 1% of reading per 10°C
	Offset stability	< 0.03 Pa/year
	Flow step response time	< 3ms
	Resolution	16 bit
	Calibrated for	Air, N ₂
	Media compatibility	Air, N ₂ , O ₂ , non-condensing

Dimensions

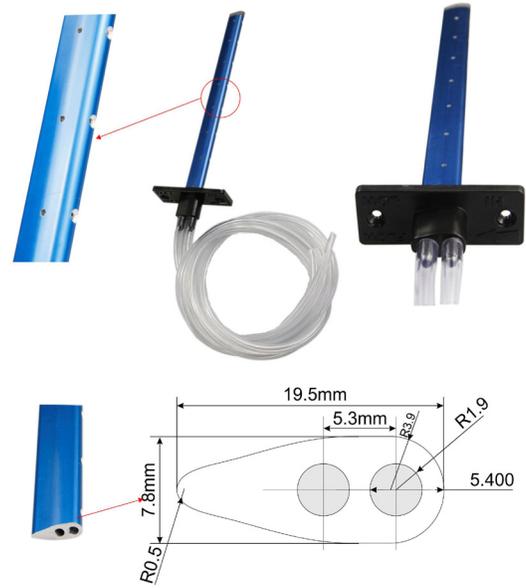


Insertion Length A (mm)	Overall Length B (mm)
150	193
200	243
250	293
300	343
1000	1043
Other custom lengths are available, no minimum order	

Wiring Diagram



Probe	Material	Aluminium alloy
	Dimensions	7.8 x 19.5mm (0.3"x 0.8")
	Tubing inner diameter	Φ3.8mm
Rubber cap	Material	Rubber
	Connections	To suit 4mm (0.16") i/d PVC air tubing
Duct flange	Material	ABS
	Dimensions	30 x 75mm (1.2"X 3")
Air tube	Material	PU
	Dimensions	inside and out side diameter Φ 4 x Φ6mm length 1m

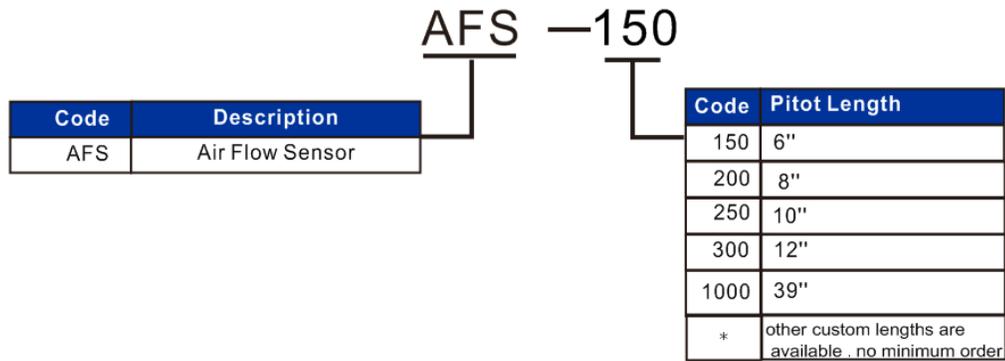


K Factor

Velocity (KM/H)	Pitot length(mm) Fan speed(Hz)	150	200	250	300	350	Average (mBar)	Comments / Remarks
25.2	60	0.420	0.421	0.427	0.424	0.451	0.429	
23.7	55	0.360	0.365	0.377	0.368	0.393	0.373	
21.7	50	0.306	0.307	0.314	0.308	0.332	0.313	
19.8	45	0.245	0.250	0.258	0.251	0.269	0.255	
17.7	40	0.197	0.195	0.198	0.195	0.208	0.199	
15.1	35	0.146	0.148	0.149	0.147	0.156	0.149	
12.6	30	0.103	0.101	0.102	0.100	0.107	0.103	
9.6	25	0.060	0.060	0.059	0.056	0.059	0.059	
7.4	20	0.032	0.033	0.034	0.034	0.036	0.034	

Fan Speed (Hz)	Left Side (KM/H)	Center (KM/H)	Right Side (KM/H)	Average Speed (KM/H)
60	25.1	24.8	25.6	25.2
55	23.6	23.3	24.1	23.7
50	21.7	21.2	22.2	21.7
45	19.6	19.4	20.3	19.8
40	17.7	17.4	17.9	17.7
35	15.1	14.8	15.4	15.1
30	12.8	12.4	12.6	12.6
25	9.6	9.4	9.7	9.6
20	7.7	7.2	7.4	7.4

Part Number Scheme



Register List

Address	Bytes	Register and Description
0	4	serial number
4	2	firmware Version
6	1	Modbus device address
7	1	Product model
8	1	Hardware Version Number
10	1	0...modbus, 1...bancet
15	1	baudrate 0:9600 1:19200 2:38400 3:57600 4:115200
17	1	1=0...10V, 0=4...20mA
18	1	0=0-50,1=0-100,2=0-250,3=0-500,unit:Pa
19	1	Sensor response time,4 sec or 10 sec
34	2	The differential pressure value obtained by the sensor,unit: Pascal
57	2	The length of the square channel, unit: cm
58	2	The Width of the square channel, unit: cm
59	1	Flow unit, 0-m³/s, 1-ft³/min, 2-L/min
60	2	Velocity, unit m/s
61	2	High 16 bits of the flow value
62	2	Low 16 bits of the flow value
63	2	The radius of the circular channel, unit: cm. When using a square channel, please make sure that this value is 0
92	1	The shape of the channel, 0: square; 1: round
93	1	The unit of the length, width or radius of the channel shape. 0: Metric unit; 1: Imperial unit.