

Air Flow Sensor

The air flow sensor is applicable to various building automation, environment monitoring, and HVAC systems. It features a simple appearance, with directly connectable terminals for convenient installation. The product utilizes a high performance embedded microprocessor along with high precision sensors, capable of meeting all kinds of high precision and highly stable measurement requirements and adapting to different environmental conditions. The air flow sensor offers current, voltage and 485 monitoring output signals for selection, employing a 485 serial port output and Modbus communication protocol. It is commonly used in HVAC systems, power plant monitoring, dynamic environmental monitoring, meteorological environmental monitoring, agricultural environmental monitoring, pharmaceutical environmental monitoring, as well as in places like airports, subway stations, hotels, museums, stadiums, etc.



AFS-150

Highlights

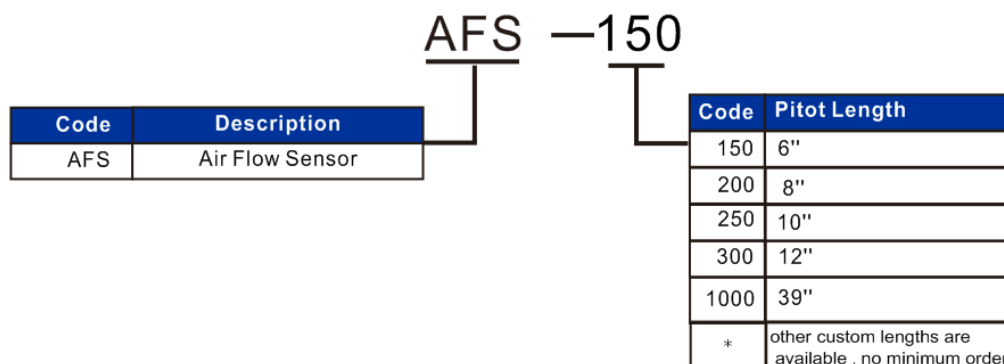
- High precision pressure sensor
- Suitable for HVAC systems
- Advanced circuit design, ensuring high accuracy and stable performance
- Concise appearance, easy installation and cost effective
- Active adjustable sensor output
- Programmable measurement range
- output and fan characteristics from fan manufacturers
- Professional and practical product design, able to withstand harsh environmental conditions
- Support for Modbus and BACnet protocols
- Easy configuration of air flow in engineering units such as CFM and m³/r

Specifications

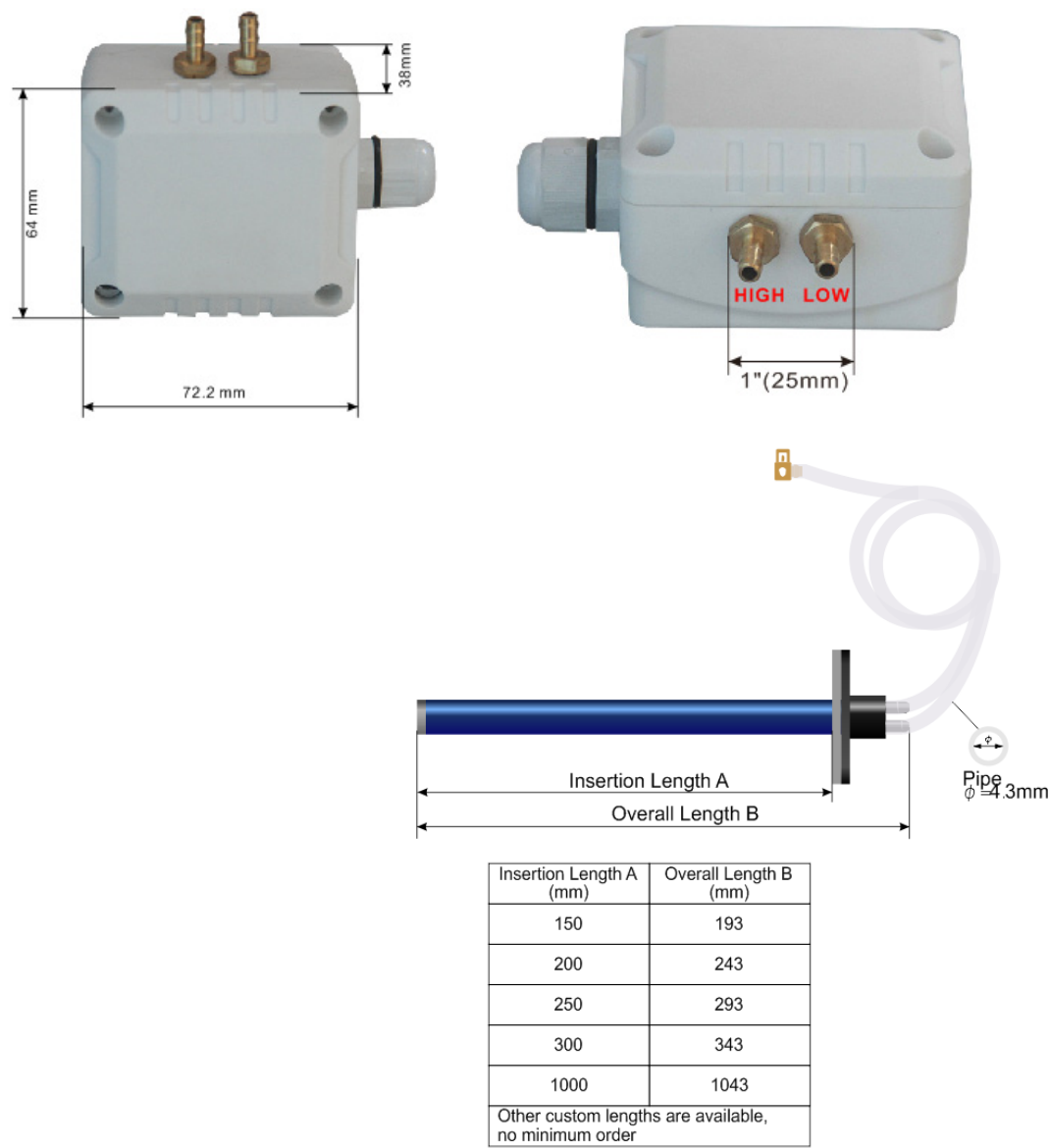
Typical Application	Duct mount indoors
Output Signal	Supports 4-20ma and 0-10V (default)
Output Signal Drive	> 500 Ω for mA mode, 75mA, max output drive for voltage mode
Power	15-24V +/- 10% AC or DC, 1 Watt typical
Plastic Housing	Flammability rating UL 94V0 file E194560
Size	72.2mmX64mmX38.4mm

Pressure	Measurement range	- 1500 to + 1500 Pa (-6 to 6 inches H2O)
	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, N2
	Media compatibility	Air, N2, O2, non-condensing
Temperature Specification	Measurement range	- 40 °C to +85 °C
	Resolution	16 bit
	Accuracy	2 °C (-10 °C to +60 °C) 3 °C (-40 °C to +85 °C)
	Repeatability	0.1°C

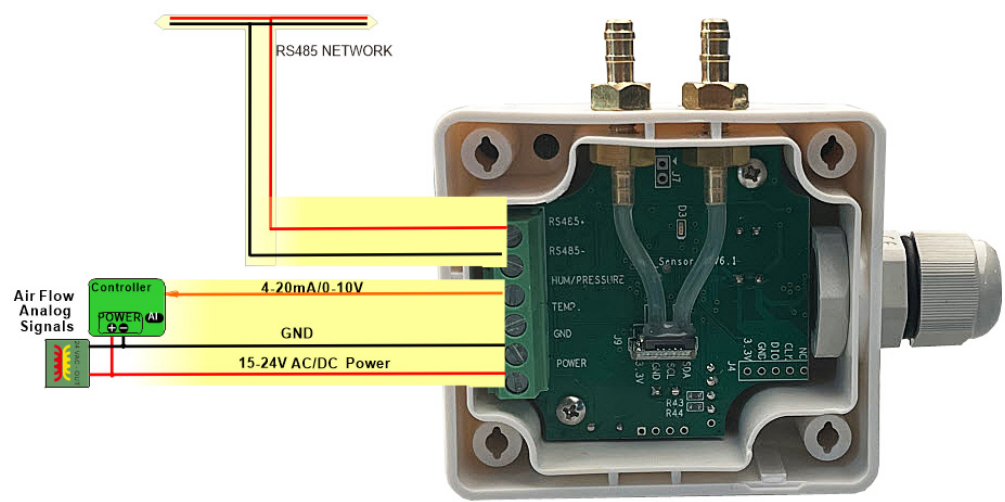
Part Number Scheme



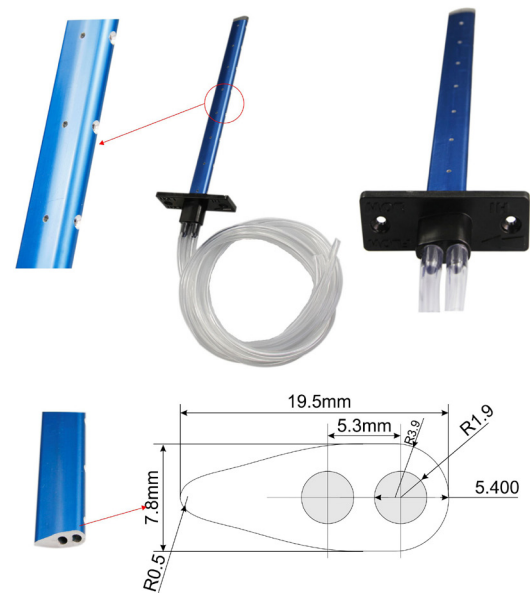
Dimensions



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

Installation

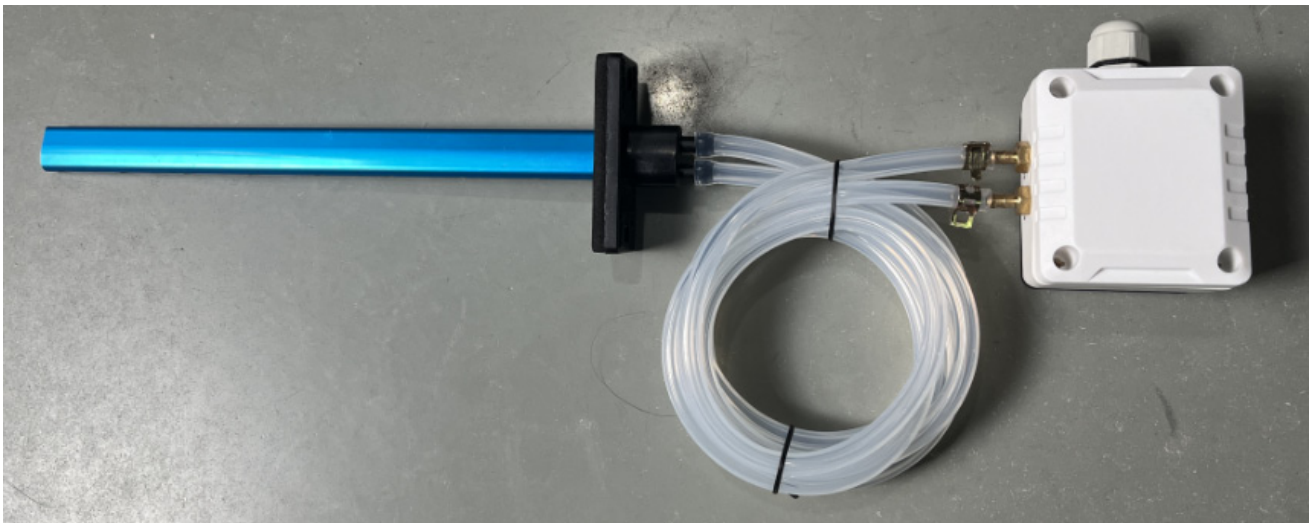
Step 1:

First, carefully remove the parts from the packaging and check for any damage.



Step 2:

as shown in the diagrams, attach one end of the pitot tube to the flange and the other end to the sensor, securing it with a clip. Just two simple steps, and the installation is complete.



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-m ³ /s, 1-ft ³ /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.

T3000 Operation

1. Visit <https://temcocontrols.com/ftp/software/09T3000Software.zip>, download T3000 software and install it;
2. Connect AFS to PC by RS485, start T3000 software

