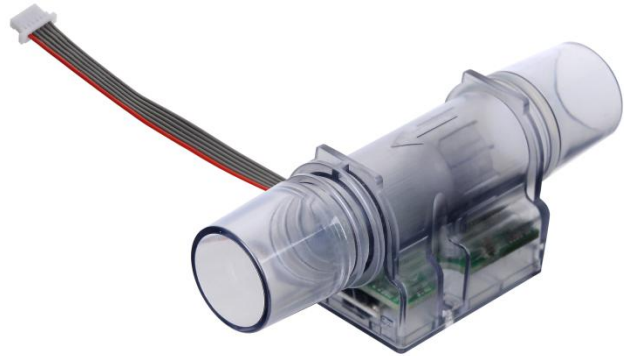


APF-200S Series Flow Sensor

Features

- Flow range: 0-200 SLM
- Low air resistance / minimal pressure loss
- With airway pressure measurement
- High precision: 2% (Reading)
- With temperature compensation
- Standard digital interface
- Real-time: response time 1ms



Applications

- Medical field: ventilator, lung function meter, spirometer, etc.
- Automation: flow / pressure monitoring and control, etc.
- Environmental protection: environmental testing, air purification, etc.
- Measurement and analysis: chromatographic analysis, experimental measurement
- Combustion control: gas medium flow and pressure monitoring and control
- Ventilation and ventilation: ventilation system
- Scenes that need to identify and monitor airway pressure at the same time

Product description

APF-200S Series Flow Sensors are integrated products for high-flow applications with integrated flow and airway pressure measurement capabilities. Suitable for flow/pressure measurement and monitoring of air, oxygen and other gaseous media. The sensor is powered by a standard 5V supply and outputs a digital flow/pressure signal for excellent noise immunity for easy integration. The sensor has a 22mm universal medical air circuit interface that meets the ISO 5356 standard pneumatic interface requirements. Available in a variety of models to meet different customer needs, and can be customized according to customer specific needs.

Performance specification

Product number	Model feature description
APF-200S-FP	FP type: with flow measurement and airway pressure measurement
APF-200S-F	Type F: only with flow measurement
APF-200S-P	P type: only with airway pressure measurement function

Note: 1) The range can be customized according to the customer's special needs. 2) It can be selected according to the product model definition

Product specification performance

Product parameters	Specification performance	instruction manual
Flow measurement range	0-200SLM	Customizable; P type is not applicable
Traffic resolution	0.1SLM	Customizable; P type is not applicable
Flow measurement accuracy (1)	±2% Reading	P type does not apply
Flow zero accuracy	±0.5% FSS	P type does not apply
Total flow measurement error (2)	±2.5% Reading±0.5% FSS	P type does not apply
Pressure drop / airway resistance	<5mBar@200 SLM	/
Pressure measurement range	0-40 hPa	Customizable; F type is not applicable
Pressure resolution	0.1 hPa	Customizable; F type is not applicable
Pressure measurement accuracy (1)	±0.25%FSS	F type does not apply
Total pressure measurement error (2)	±1%FSS	F type does not apply
Temperature compensation range	0-50°C	/
Response time	1 ms	/
Maximum common mode pressure	350 KPa	Customizable

Note: 1) The ambient temperature is 25 degrees and the atmospheric pressure is 101.3Kpa. 2) Including errors introduced by temperature, repeatability, hysteresis, etc.

Protocol

Product electrical specifications

Power range	5V±5% DC
Power consumption	80 mA max
Output Interface	UART (3.3V TTL)
Baud rate	1M BPS
Data Format	8-bit data, 1 stop bit, no parity
Data upload cycle	1KHz

Note: Please refer to the communication protocol document for detailed communication protocol.

Electrical interface definition

Interface socket: 6pin WTB 1.0mm, model SM06B-SRSS-TB (JST), can be customized connection wire. The PIN pin is defined as follows:

Pin	definition	Function Description
6 (red wire end)	VCC	Power supply
5	GND	Negative power supply
4	TXD	Serial data transmission (3.3V TTL)
3	RXD	Serial data reception (3.3V TTL)
2	NC	Empty pin
1	NC	Empty pin

Communication protocol format

Packet format

Baotou (0x5D5D)	Data 1 (0XXXXX)	Data 2 (0XXXXX)	Data 3 (0XXXXX) (0XXXXX)	Data 23 (0XXXXX)	Checksum (0XXXXX)
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The packet has a fixed length of 25 Half Words. The head is fixed at 0x5D5D

Checksum: Accumulate by "Data 1" ~ "Data 13" and add 1 and take a negative value. $CHK = - ("Data 1" + "Data 2" + \dots + "Data13" + 1)$

Data upload cycle: 1KHz

Data 1~13 Definition:

Data 1	Reserved*
Data 2	Reserved*
Data 3	Reserved*
Data 4	Measuring pressure in real time $0xXXXX = 0xXXXX * 0.1 \text{ cmH}_2\text{O}$ (with sign) Example: $0x000F = 1.5 \text{ cmH}_2\text{O}$
Data 5	Measuring pressure in real time $0xXXXX = 0xXXXX * 0.1 \text{ cmH}_2\text{O}$ (with sign) Example: $0x000F = 1.5 \text{ cmH}_2\text{O}$
Data 6 - 22	Reserved*
Data 23	Reserved*

*Reserved data is invalid for the user, but will participate in checksum calculation

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