Model PFLOW4008 Series

MEMS Mass Flow Sensors

(VB.0)

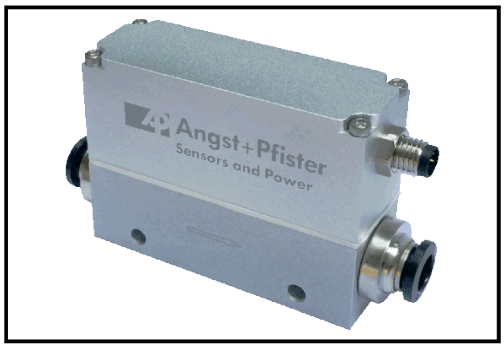
CE

MEMS Mass Flow Sensor

PFLOW4008 Series

PFLOW4008 is specially customized for proprietary applications.

The sensor is utilizing the Company's MEMS mass flow sensor with customized circuitry and enclosure.

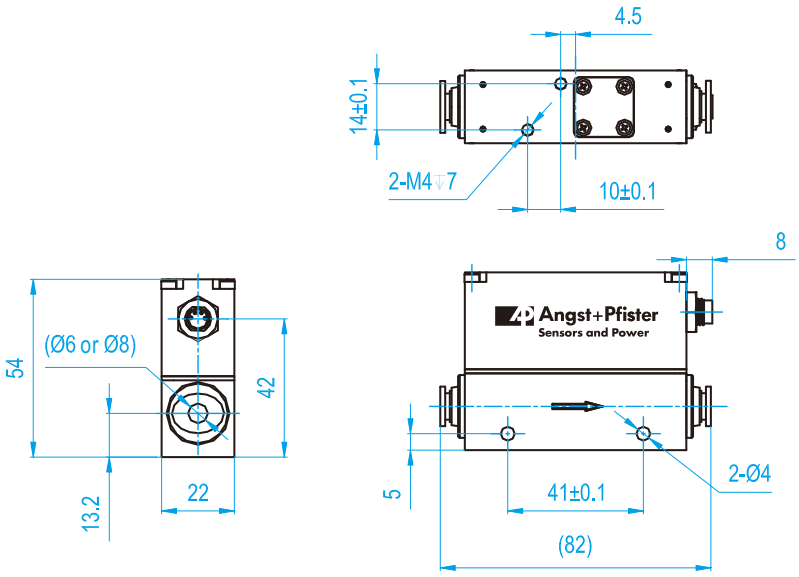


Specifications

Model	Value		Unit
DN	8		mm
Flow range	0 ~ 2, 5, 10	0 ~ 20, 50	SLPM
Accuracy	±(1.5 + 0.2FS)		%
Gas compatible	Non-corrosive/non-explosive		
Pressure rating	5		bar a
Max. pressure	8		bar
Mechanical connector	Φ6 mm/Φ8 mm One-touch connectors		
Electrical interface	Linear: IO-Link and analog 0 ~ 10 VDC / I^2C		
Body	Al-alloy 6063		
Protection rating	IP67		
Power supply	12 ~ 30		Vdc
Working current	< 20		mA
Null shift	±30		mVdc
Temperature coefficient	< ±0.12		%/°C
Maximum pressure loss	30, 200, 800	1100, 4700	Pa
Response time	10		msec
Operation temperature	-10 ~ +55		°C
Humidity	<95%RH, no condensation		
CE	EN50081/50082		
Electrical connection	M8		
Standard condition	0 °C, 1013 mbar		
Maximum Overflow *	30	200	SLPM

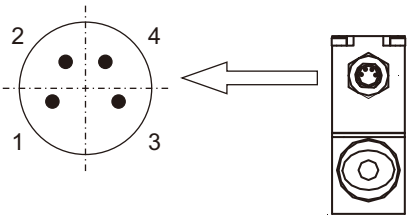
* The sensors of 0 ~ 2, 0 ~ 5 and 0 ~ 10 SLPM have same flow channels, the maximum overflow is 30 SLPM; While the sensors of 0 ~ 20 and 0 ~ 50 SLPM have same flow channels, the maximum overflow is 200 SLPM.

Dimensions



Electrical connection

Pin #	Definition
1	Power Supply (12 ~ 30 VDC)
2	Analog Output (0 ~ 10 VDC) / I²C-SDA
3	GND
4	IO-Link output / I²C-SCL



Sensor selection

The sensor part number is composed of the product model number and suffix indicating the full scale flow rate, mechanical connection, output format as well as the application gas. Refer the following for details.

PFLOW4008 □ - □ - □ - □ - □

- Gas (Air, N2, O2, AR: Argon, CO2, others please contact manufacturer.)
- Output (I2C, IOL: IO-Link)
- Connection (NPT: NPT 1/4, BSPT: BSPT 1/4, ONET6: One-touch, ID=6mm ONET8: One-touch, ID=8mm)
- Full scale Flow Rate[1] (selectable, 2, 5, 10, 20, 50SLPM)
- Version (Null: Standard version)

1, Max. flow rate number and Unit, for example, 10SLPM.

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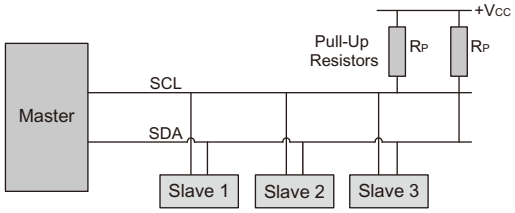
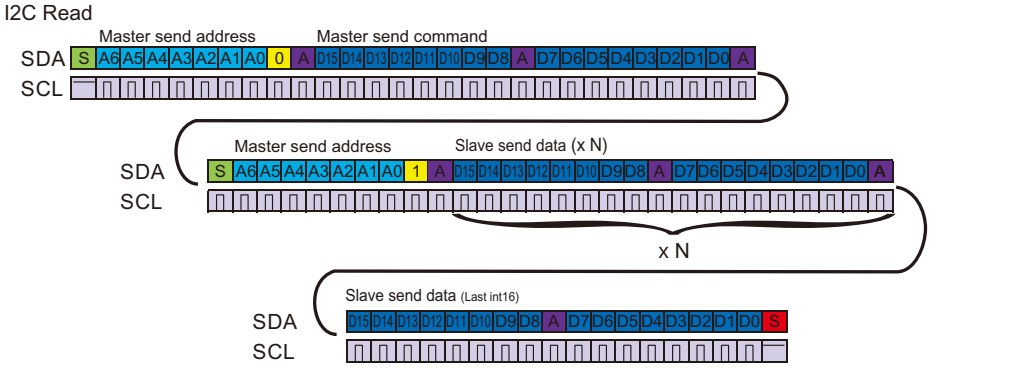
Dimensions

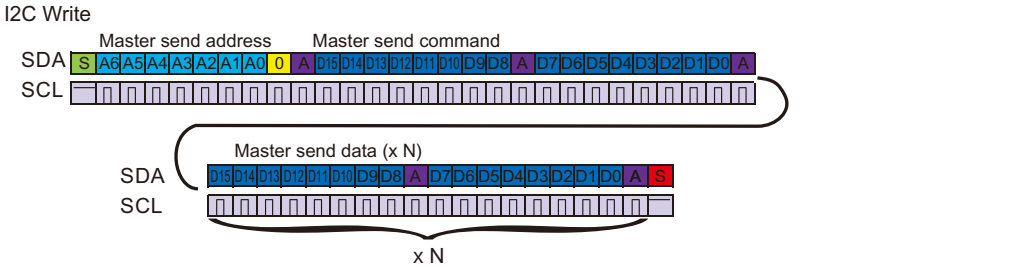
1. I²C Connection



Vcc: 3.0 ~ 5.5 Vdc
Rp: 1.0 ~ 10.0 kΩ
I²C bus clock frequency: 100 kHz

2. I²C Read and Write Sequences





Notes

Bit	Name	Description
S	Start bit	Master pulls SDA from high to low while SCL remains high.
S	Stop bit	Master allows SDA to float from low to high while SCL remainshigh.
A	ACK	
1	Read(1Bit)	
0	Write(1Bit)	
A6	Address	15 bits, bit15 ~ bit8=0, bit7 ~ bit1 are available. Default address is 1 (0000 0000 **0000 001**x) .
D15	Data bit	16 bits

3. I²C Commands description

Command Byte	Length (int16)	Command Name	R/W	Notes
0x00A4	1	The I²C address	R/W	Int16, bit15 ~ bit8 =0, bit7 ~ bit1 are available, bit0 is the R/W flag bit.
0x0030	6	The sensor SN	R	ASCII
0x003A	2	The flow rate	R	Int32(/1000 SLPM)
0x00F0	1	Calibrate the offset of flow rate	W	Fixed value, 0xAA55

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Safety and Maintenance

Safety Precautions

The sensors cannot be used for gas metrology of fluoride or fluoride containing gases. For updates of the product certification information, please contact manufacturer. Use for other gases such as extreme corrosive and toxic may cause the product malfunctioning or even severe damages The product sealing is ensured to work under working pressure of 0.8 MPa and is leakage proof before the shipment But cautions and further leakage test are important at installation as well since any leakage could cause severe safety issue. The power supply for this product is a lithium battery, all precautions and measures for electrical voltage handling must apply.

Attention: any alternation and/or improper use of the product without the permission of the manufacturer can cause unpredicted damages and even injuries or other severe situations. APSP or any of its employees, subsidiaries shall not be hold and indemnified against such consequences due to such circumstances via improper use of the product.

Maintenance

Attention: without prior permission of the manufacturer, please do not attempt to alter any parts of the product as it may cause unrecoverable damages. If there are questions or doubts, please contact manufacturer immediately before further actions.

All maintenance of the sensor should be performed by trained and certified personnel.

This document contains information for a product that is just released or under further development.
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