

DESCRIPTION

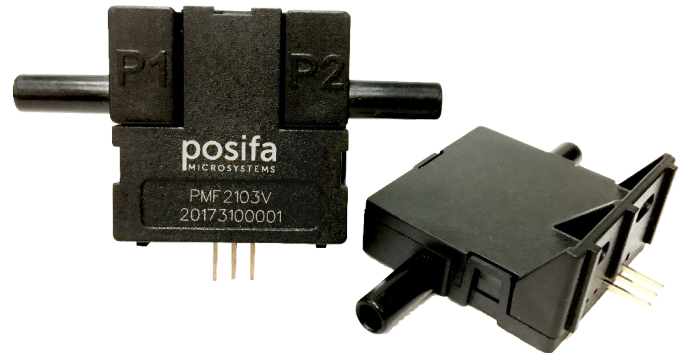
PMF2000 features Posifa's third-generation thermal flow die, benefiting from the latest innovations in microfabrication. The sensor die uses a pair of thermopiles to detect changes in temperature gradient caused by mass flow, delivering excellent signal-to-noise, and unsurpassed repeatability. The "solid state" thermal isolation structure on the sensor die eliminates the need for surface cavity or fragile membrane used in competing technologies, making the sensor resistant to clogging and pressure shock.

The PMF2000 series includes an analog version PMF2000V and a digital version PMF2000D that supports the I2C protocol.

The supported flow rate ranges from 10 sccm to 10 SLM. The sensors are temperature compensated over the temperature range of 0 to 50 °C. The linearized output provides maximum flexibility and ease-of-use.

APPLICATIONS

- Oxygen concentrators
- Nebulizers
- CPAP equipment
- Leak detection
- Spectroscopy
- Mass flow controller
- Fuel cell control
- Environmental monitoring



FEATURES

- Unsurpassed performance in a robust and cost effective package
- "Solid state" sensing core (no surface cavity or fragile membrane) resistant to clogging and pressure shock
- Highly accurate (4% reading typ.)
- Fast response time (5 ms typ.)
- Linear output and temperature compensation
- Long-term stability with minimal null drift

MAXIMUM RATINGS

- Operating Temperature: -25 to 85 °C
- Calibrated Temperature Range: 0 to 50 °C
- Storage Temperature: -40 to 90 °C
- Humidity: 0 to 100% RH, non-condensing
- Shock: 100 g peak (5 drops, 3 axis)
- Common Mode Pressure: 25 psi

SPECIFICATIONS

Test Conditions: $V_{in}=10\pm 0.01VDC$, $T_a=25^{\circ}C$. Relative Humidity: $40\%<RH<60\%$					
SPECIFICATIONS	MIN	TYP	MAX	UNIT	CONDITIONS
PMF2050	0		10	sccm ¹	
PMF2100	0		30	sccm	
PMF2101	0		200	sccm	
PMF2102	0		1000	sccm	
PMF2103	0		2000	sccm	
PMF2104	0		3000	sccm	
PMF2108	0		10	SLM	
Output Voltage (V)²					
	1 to 5			VDC	
Null Voltage (V)	0.95	1	1.05	VDC	
Output Count (D)	256 to 16124			Count	
Null Count (D)	156		356	Count	
Null Drift		0.2		% F.S.	
Repeatability		0.1		% F.S.	
Accuracy³		1%		F.S.	0 to 25% F.S.
		4%		Reading	25 to 100% F.S.
Resolution (D)		14		Bit	
Response Time⁴		5		mSec	
Supply Voltage (V)	6	10	16	Vdc	
Supply Voltage (D)	4.75		16	Vdc	
Current		21	26	mA	
Wetted Materials	Silicon carbide, epoxy, PPE+PE, FR4, and silicone as static seal				

1. SLM: standard liter per minute. Standard conditions: 0 °C and 1 atmosphere.
2. V refers to the analog version of PMF2000, and D refers to the digital I2C version.
3. Maximum deviation in output from nominal over the entire calibrated flow range and temperature range. Errors include offset, full scale span, linearity, flow hysteresis, repeatability and temperature effects over the compensated temperature range.
4. 10% to 90% rise time of the flow sensor to electrically respond to any mass flow change. May be affected by the pneumatic interface.

LINEAR OUTPUT

For **PMF2000V**

Flow Rate = $[(V_{out} - 1 V) / 4 V] \times \text{Full Scale Flow Rate}$

For example, for PMF2101V full scale flow rate is 200 sccm. When V_{out} reads 3 V, the Flow Rate is: $[(3 V - 1 V) / 4 V] \times 200 \text{ sccm} = 100 \text{ sccm}$

For **PMF2000D**

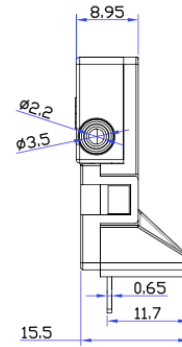
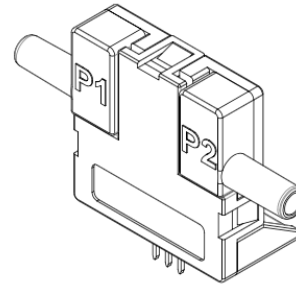
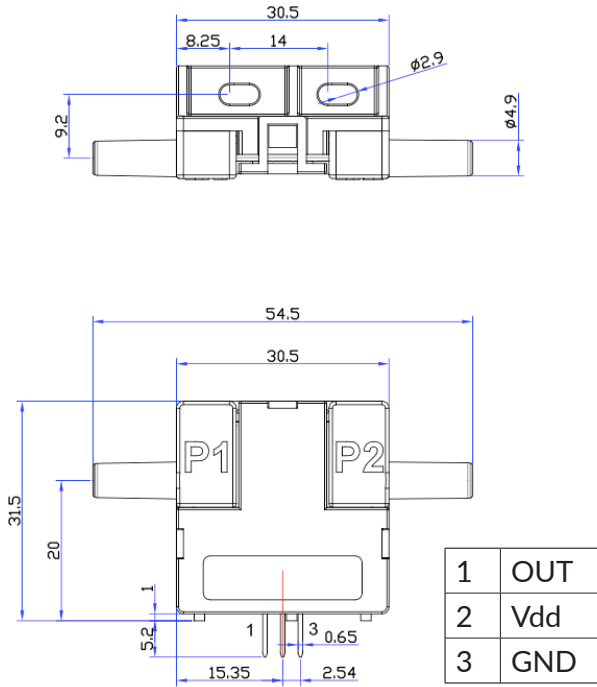
Flow Rate = $[(\text{Count} - 256) / 15868] \times \text{Full Scale Flow Rate}$

For example, for PMF2101D full scale rate is 200 sccm. When digital output reads 10000, the Flow Rate is:

$[(10000 - 256) / 15868] \times 200 \text{ sccm} = 122.81 \text{ sccm}$

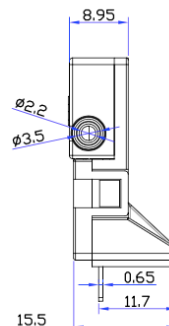
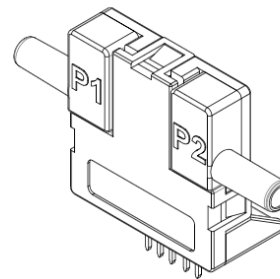
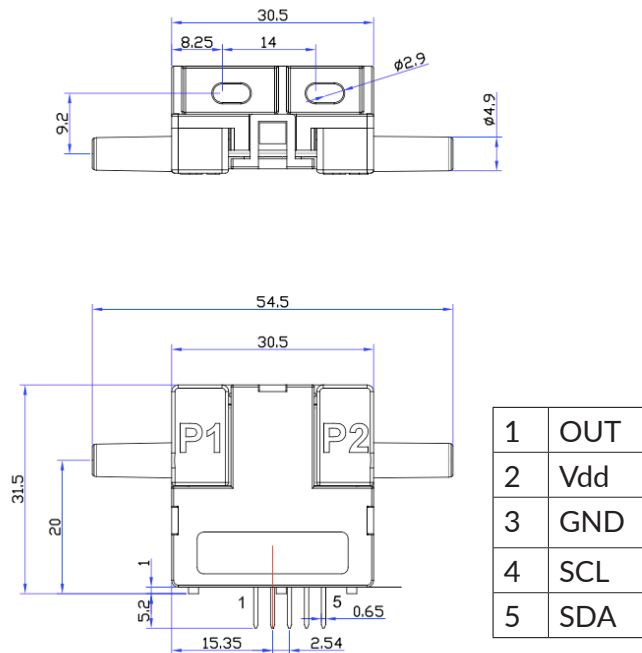
PACKAGE DIMENSIONS

PMF2000V



Unit: mm

PMF2000D



ORDERING INFORMATION

PART NUMBER	SPECIFICATIONS
PMF2050V	10 sccm, 1 to 5 V, Linear
PMF2100V	30 sccm, 1 to 5 V, Linear
PMF2101V	1000 sccm, 1 to 5 V, Linear
PMF2102V	2000 sccm, 1 to 5 V, Linear
PMF2103V	3000 sccm, 1 to 5 V, Linear
PMF2108V	10 SLM, 1 to 5 V, Linear
PMF2101D	1000 sccm, I2C, Linear
PMF2103D	3000 sccm, I2C, Linear

EUROPEAN DISTRIBUTOR

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