

### DESCRIPTION

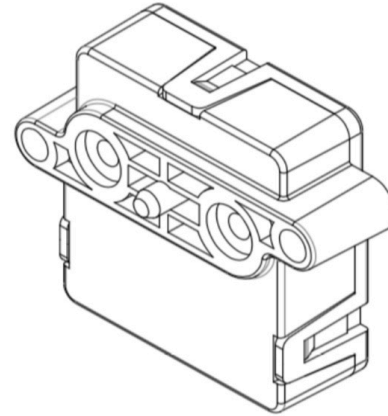
PMF6000 was developed specifically for use in bypass assemblies by customers wishing to design their own flow body and restrictor element. By utilizing the linearized factory calibration from Posifa customers can create master calibration curves specific to their custom bypass design with minimal additional corrections in the production process. The compact packaging protects the flow die inside and provides a standardized package for manifold mounting.

PMF6000 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 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 PMF6000 series includes the analog output PMF6000V and the digital I<sup>2</sup>C output PMF6000D.

### 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
- Operating 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
PMF6102	0		1000	sccm <sup>1</sup>	
PMF6106	0		6000	sccm	
Output Voltage (V) <sup>2</sup>	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.	Per year
Repeatability		0.1		% F.S.	
Accuracy <sup>3</sup>		1%		F.S.	0 to 25% F.S.
		4%		Reading	25 to 100% F.S.
Resolution (D)		14		Bit	
Response Time <sup>4</sup>		5		mSec	
Supply Voltage (V)	6	10	16	Vdc	
Supply Voltage (D)	4.75		16	Vdc	10V recommended for best performance
Current	22		23	mA	
Wetted Materials	Silicon carbide, epoxy, PPS, 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.

## OUTPUT DESCRIPTION

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### For **PMF6000V**

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

For example, for PMF6102V full scale flow rate is 1000 sccm. When  $V_{out}$  reads 3 V, the Flow Rate is:  $[(3 V - 1 V) / 4 V] \times 1000 \text{ sccm} = 500 \text{ sccm}$

### For **PMF6000D\***

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

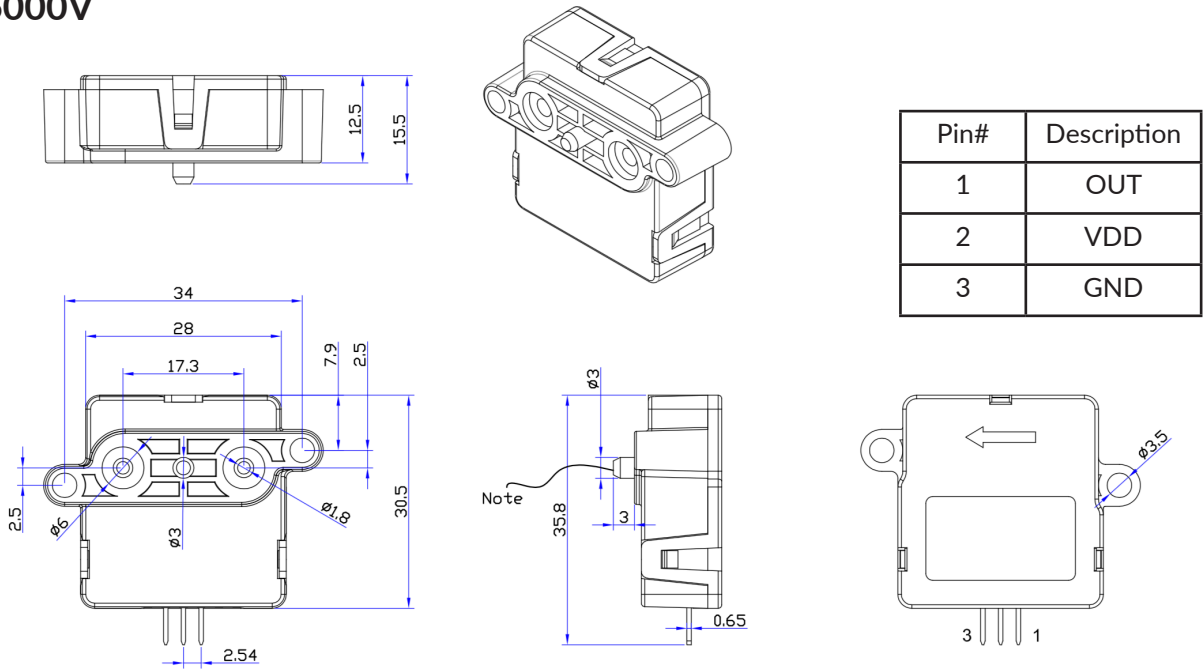
For example, for PMF6102D full scale rate is 1000 sccm. When digital output reads 10000, the Flow Rate is:

$[(10000 - 256) / 15868] \times 1000 \text{ sccm} = 614 \text{ sccm}$

\*Contact Posifa for I<sup>2</sup>C communication app note

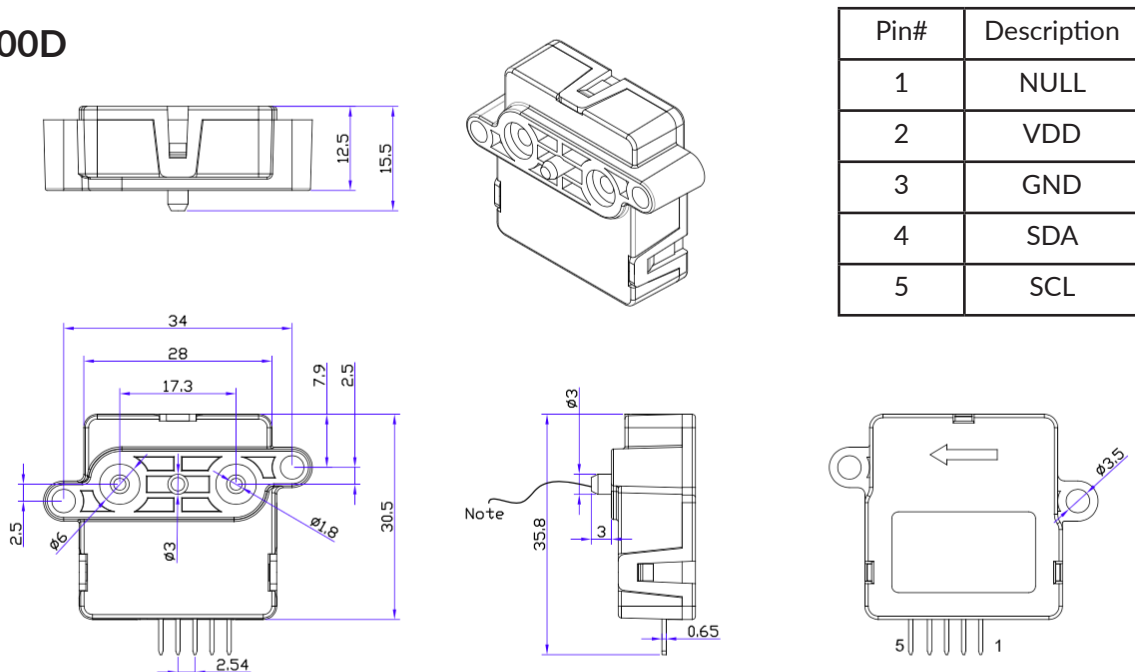
## PACKAGE DIMENSIONS

### PMF6000V



Note: The positioning hole on the manifold that receives the post shall have a diameter between 3.2 and 3.3mm, and a depth greater than 3.3mm. Contact Posifa for sensor CAD model.

### PMF6000D



## ORDERING INFORMATION

PART NUMBER	SPECIFICATIONS
PMF6102V	1000 sccm, 1 to 5 V, Linear
PMF6106V	6000 sccm, 1 to 5 V, Linear

Order I<sup>2</sup>C Digital Output models by specifying “D” instead of “V” in part numbers above.

Please contact Posifa to place an order.

## CUSTOMIZATION OPTIONS

If the standard product described in this datasheet does not completely meet your needs, please contact Posifa Technologies to discuss other options. Help us understand your application and sensor requirements and we can work together to find the best overall solution.