

Posifa Technologies
Airflow Sensing Solutions
for Medical Devices
Product Catalog



posifa
TECHNOLOGIES

Posifa Airflow Sensing Solutions for Medical Devices

Reliable. Certified. Proven in the Field.

Introduction

Every breath matters — and precision airflow sensing makes it possible.

Posifa Technologies is a **Silicon Valley-based innovator** in MEMS flow and gas sensing, delivering the accuracy and reliability that medical device manufacturers depend on. With **over 40 global patents** and sensors integrated into **FDA-cleared respiratory and therapeutic systems**, Posifa provides **solid-state MEMS airflow sensors** engineered for exceptional **stability, durability, and manufacturability** across applications including **ventilators, anesthesia machines, oxygen concentrators, nitric oxide delivery systems, nebulizers, cough assist devices, and spirometers**.

Built on a proven MEMS architecture that **eliminates fragile membranes and surface cavities**, Posifa sensors resist **pressure shocks, condensation, and contamination** — ensuring consistent calibration and long-term performance even under demanding clinical conditions.

Our **third-generation MEMS die**, now in high-volume production, delivers the precision, scalability, and supply continuity required for next-generation respiratory care.



The Posifa Advantage

Attribute	Traditional Sensors	Posifa MEMS Sensors
Sensor construction	Fragile membrane or cavity	Solid-state MEMS die – no cavity, no membrane
Resistance to condensation	Susceptible to clogging	Unaffected by moisture or humidity
Pressure shock	Can damage the membrane	Shock-resistant
Drift over time	Requires frequent recalibration	Stable calibration for sensor lifetime
Flow range	Limited	Wide dynamic range
Output options	Analog only	Analog or digital (I ² C)
Manufacturing consistency	Inconsistent across suppliers	ISO 9000-certified process
Field reliability	Moderate	7+ years continuous OEM supply – zero field failures

Proven Quality and Reliability

- Manufactured under **ISO 9000-certified processes**, ensuring traceable quality from wafer to assembly
- Designed for integration into **FDA-, MDR-, and NMPA-compliant medical devices**
- **7+ years of uninterrupted OEM supply with zero recorded field failures**
- **Tens of millions of sensors shipped** to leading global respiratory and medical device manufacturers

When patient safety depends on precision, Posifa delivers.

Designed for Flexibility

Posifa's **modular sensor platforms** offer a full range of **flow configurations, output formats, and mechanical options** to match diverse system architectures.

From **off-the-shelf modules** for rapid evaluation to **die-level components** for custom integration, our solutions help OEMs meet their performance, cost, and form-factor goals – all while accelerating time-to-market.

Typical Specifications

- Flow range: 0–300 SLPM
 - Accuracy: ± 1 % of reading
 - Response time: < 5 ms
 - Output: Analog / I²C
 - Drift: < 1 % over lifetime
 - Power: < 10 mW
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Market Outlook and Roadmap

As demand for **smarter, connected respiratory and diagnostic devices** continues to grow, airflow sensing remains the unseen force ensuring precision, safety, and efficiency.

Posifa is investing in next-generation MEMS and ASIC technologies to enable:

- Connected, self-diagnostic medical systems with integrated data interfaces
- Portable and home-based respiratory devices with low power and compact footprints
- Simplified OEM calibration and traceability tools to support MDR and FDA compliance

With a proven track record, certified global manufacturing, and a clear roadmap for innovation, **Posifa Technologies is shaping the future of medical airflow sensing.**

Application Examples

Oxygen Concentrators (POC Pulse Dose Mode)

In oxygen concentrators, long service life and consistent flow accuracy are key to maintaining therapeutic efficacy and user safety. Posifa's airflow sensors combine high stability and low power consumption, making them ideal for both stationary and portable concentrator designs. Their robust MEMS construction withstands continuous operation and exposure to varying humidity levels without degradation. With analog and digital interface options, they provide flexible solutions for OEMs seeking to improve efficiency and reliability in oxygen generation and delivery systems.



For a use case on our airflows sensors in portable oxygen concentrators (POC), please refer to the PowerPoint link at the end of this document.

Inhaled Nitric Oxide Delivery Systems (PPHN and Acute Care)



Precise flow control and reliability are essential in nitric oxide delivery systems, where dosage accuracy directly affects patient safety and therapeutic outcomes. Posifa's MEMS airflow sensors deliver the fast response and excellent repeatability required for these critical-care devices. Their solid-state construction eliminates fragile elements that can shift calibration or fail under pressure spikes, ensuring consistent performance even with humidified gas streams. Compact, factory-calibrated modules simplify integration into closed-loop delivery systems for both neonatal and adult applications.

Ventilators and Anesthesia Machines (ICU, NICU, OR)

Ventilators and anesthesia machines rely on dependable airflow measurement across a wide dynamic range – from gentle neonatal ventilation to high-flow adult settings. Posifa's sensors provide stable output unaffected by condensation, vibration, or long operating cycles. Their solid-state architecture resists drift and clogging, while high sensitivity at low flow rates ensures accurate monitoring of patient inhalation and exhalation volumes. Available in a range of calibrated flow ranges and output formats, they integrate easily into existing control architectures and meet the performance demands of critical-care environments.



Nebulizers

Stable Airflow Measurement for Precise Aerosol Delivery



In nebulizer systems, consistent airflow is essential to ensure accurate aerosol particle size and precise medication delivery. Posifa's MEMS airflow sensors provide the responsiveness and long-term stability required for both portable and stationary nebulizers. Their solid-state construction eliminates mechanical drift and contamination issues common in traditional sensors, maintaining stable output across a wide range of flow rates and humidity levels.

Cough Assist Devices

Cough assist devices depend on accurate airflow sensing to coordinate inhalation and exhalation cycles safely and effectively. Posifa's MEMS sensors offer the fast response time, repeatability, and zero-drift stability needed for precise pressure and flow control. Their solid-state design withstands the rapid reversals and moisture conditions inherent in these systems, ensuring reliable performance and consistent patient therapy.



Take the Next Step in Precision Airflow Sensing

Partner with Posifa to Bring Your Next Medical Innovation to Life

Schedule a Technical Consultation

Collaborate directly with our engineering team to select or tailor the optimal airflow sensor for your application.

Request an Evaluation Kit

Test Posifa's MEMS airflow sensors in your own development environment and validate their performance.

Review Compliance and Quality Documentation

Access FDA, MDR, and NMPA compliance materials and ISO 9000 certification details to streamline your approval process.

Initiate a Pilot Program

Accelerate your design cycle with agile engineering support and field-proven sensors ready for high-volume production.

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The future of precision airflow sensing starts here.

PRODUCT OVERVIEW

The following table summarizes Posifa Technologies' mass airflow sensor offerings, highlighting key electrical and mechanical characteristics for easy comparison. Detailed datasheets for each part are available upon request or can be downloaded directly from our website.

From compact OEM dies to fully calibrated modules, Posifa's portfolio of mass airflow sensors deliver scalable solutions designed for high-volume manufacturing and medical-grade accuracy.

PART NUMBER	SPECIFICATIONS	GENERATION
PMF2101V	200 sccm; 1 to 5 V; Linear	Gen I
PMF2102V	1000 sccm; 1 to 5 V; Linear	Gen I
PMF2103SV-P	2000 sccm; 1 to 5 V; Linear; Parylene C as Wetted Material	Gen I
PMF2103V	2000 sccm; 1 to 5 V; Linear	Gen I
PMF2104V	3000 sccm; 1 to 5 V; Linear	Gen I
PMF2105V	4000 sccm; 1 to 5 V; Linear	Gen I
PMF2108V	10 SLM; 1 to 5 V; Linear	Gen I
PMF4003D	12 SLM; I ² C; Linear	Gen I
PMF4004D	20 SLM; I ² C; Linear	Gen I
PMF4005D	35 SLM; I ² C; Linear	Gen I
PMF4100D	50 SLM; I ² C; Linear	Gen I
PMF4101D	100 SLM; I ² C; Linear	Gen I
PMF4102D	150 SLM; I ² C; Linear	Gen I
PMF4103D	200 SLM; I ² C; Linear	Gen I
PMF4104D	300 SLM; I ² C; Linear	Gen I
PMF4105D	250 SLM; I ² C; Linear	Gen I
PMF4A05V-B	±500 SLM; 1 to 5 V; Linear; Bi-direction	Gen I
PMF5003D	30 SLM; I ² C; Linear	Gen I
PMF5006D	15 SLM; I ² C; Linear	Gen I
PMF5007D	20 SLM; I ² C; Linear	Gen I
PMF5008D	40 SLM; I ² C; Linear	Gen I
PMF5009D	60 SLM; I ² C; Linear	Gen I

PART NUMBER	SPECIFICATIONS	GENERATION
PMF6102V	1000 sccm; 1 to 5 V; Linear	Gen I
PMF6106V	6000 sccm; 1 to 5 V; Linear	Gen I
PMFc3100V	Compatible with AWM3100V; 200 sccm; 1 to 5 V	Gen I
PMFc3300V	Compatible with AWM3300V; 1000 sccm; 1 to 5 V	Gen I
PMFc43300V	Compatible with AWM43300V; 1 to 5 V; 0 to 1000 SCCM	Gen I
PMFc43600V	Compatible with AWM43600V; 1 to 5 V; 0 to 6 SLPM	Gen I
PMFc720P1	Compatible with AWM720P1; 1 to 5 V; 0 to 200 SCCM	Gen I
PMF82010	10 SLM, Voltage and Digital I ² C Output, Linear	Gen II
PMF83015	15 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF83020	20 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF83050	50 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF83100	100 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF86050	50 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF86100	100 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF86150	150 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF86200	200 SLM; Voltage and Digital I ² C Output; Linear	Gen II
PMF86300	300 SLM; Voltage and Digital I ² C Output; Linear	Gen II