

Description

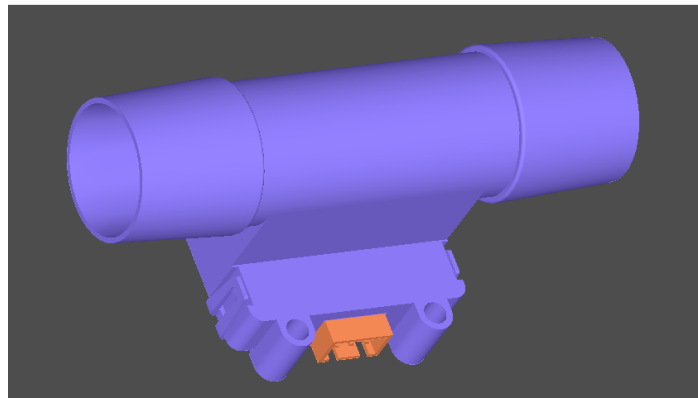
Posifa's PMFc700 series of Mass Air Flow Sensors offer pin compatible upgrade solutions to the popular AWM700 series from Honeywell. Using the robust Posifa Thermal Flow Sensor Die, and incorporating the latest microcontroller technology, PMFc700 offers drastically improved interchangeability (< 2% full scale), temperature stability (< 3% full scale from 0°C to +50°C), and resistance to adverse environmental factors such as dust particles and water vapor that have plagued the AWM700.

Tailored to meet the exacting packaging and calibration specifications of AWM700, PMFc700 also offers enhanced interchangeability by improving the output tolerance by over 200% to < 2% full scale. Additionally, PMFc700 is temperature compensated to < 3% full scale drift over the temperature range of 0°C to +50°C. For those more stringent applications, Posifa offers other precision versions with output tolerance as low as 1.5%.

Posifa designed the PMFc700 series of Mass Air Flow Sensors from the ground up, incorporating the latest MEMS and microelectronics innovations. The sensor die uses a pair of thermopiles to detect changes in temperature gradient caused by mass flow, delivering ultra-low noise to signal, and unsurpassed repeatability. The "solid state" thermal isolation on the die eliminates the need for surface cavity or fragile membrane, making the sensor resistant to clogging (from water vapor or dust particles) and pressure shock. The sensor's signal conditioning circuitry leverages off-the-shelf microcontroller, providing proven reliability and low cost.

Applications in medical, industrial and transportation industries are benefiting by:

- Taking advantage of tighter tolerances
- Eliminating complicated and expensive temperature compensation schemes
- Inherent immunity to adverse environmental factors



Features

- Resistance to dust, water vapor and shock
- Fast response time, 1ms
- Amplified analog output - 5V full scale
- Digitally improved sensor interchangeability <2% full scale
- Custom flow ranges available (50 to 200 SLM)
- Replaced AWM700 series sensors

Applications

- Oxygen concentrators; oxygen conservers
- Respirators and ventilators
- Nebulizers
- Continuous positive airway pressure (CPAP) equipment
- Anesthesia delivery
- Leak detection
- Spectroscopy
- Mass flow controllers
- Telecommunication systems
- Environmental climate controls
- Fuel cell controls

Absolute Maximum Ratings

- Operating Temperature -25 °C to 85 °C
- Storage Temperature -40 °C to 90 °C
- Shock 100 g peak (5 drops, 6 axis)
- Common Mode Pressure 25psi

ELECTRICAL CHARACTERISTICS

Test Conditions: $V_{in}=10\pm 0.01VDC$, $T_a=25^\circ C$

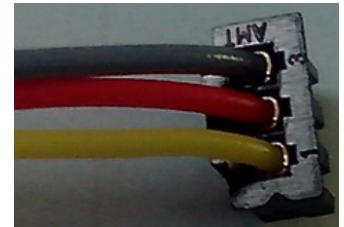
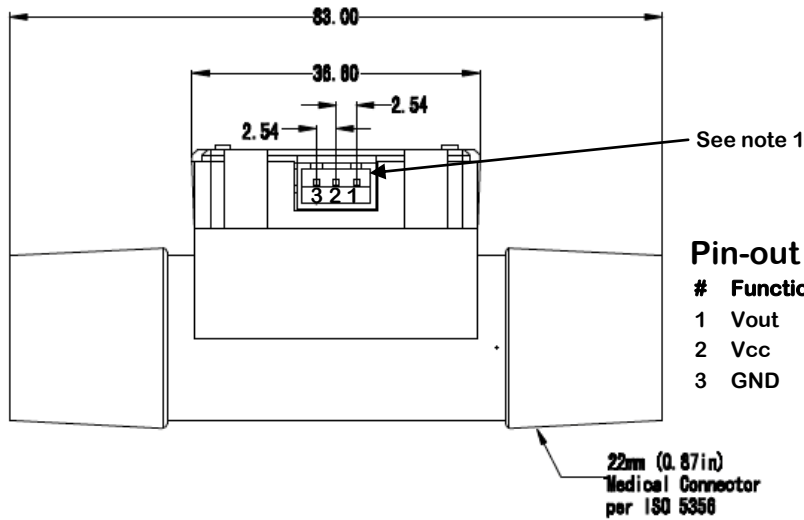
PARAMETERS	PMFc720P1			UNIT	CONDITIONS
	MIN	TYP	MAX		
Flow Range (Full Scale)			200	SLM	
Output Voltage		5		VDC	@200 SLP
Null Voltage		1.00±0.01		VDC	
Null Voltage Shift			±10	mV	0°C - +50°C
Output Voltage Shift			±3	%	0°C - +50°C
Repeatability & Hysteresis			±0.20	%	
PMFc700 SERIES					
Supply Voltage	8	10	14	VDC	
Operating Current	22		24	mA	
Response Time		1	3	msec	
Common Mode Pressure			25	psi	
Wetted Materials	Silicon carbide, Silicon, Epoxy, PPS, FR4, Silicone as static seal				

Output Flow vs. Interchangeability

Supply =10VDC, $T_a=25^\circ C$

PMFc720P1			AWM720P1
Flow sccm	Nom. Vout	Tol. ±V	Tol. ±V
0	1.00	0.05	0.05
25	2.99	0.06	
50	3.82	0.06	0.18
75	4.30	0.08	
100	4.58	0.08	
150	4.86	0.08	
200	5.00	0.08	0.36

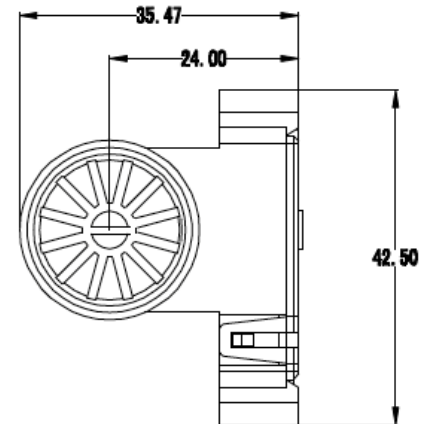
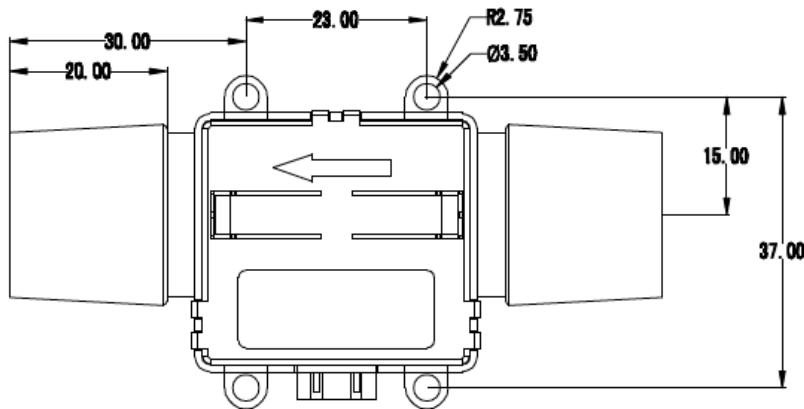
Package Dimensions



Mating Connector

Pin-out

#	Function	Wire Color
1	Vout	Yellow
2	Vcc	Red
3	GND	Grey



Note 1: Mating connector with 12 inch pigtail provided.

Ordering Information

Part Number	Specifications
PMFc720P1	Compatible with AWM720P1; 1 to 5 V; 0 to 200 SCCM