

D6F-PH Series Differential Pressure Sensor



High Impedance MEMS Mass Flow Technology

Economical

I²C Digital Output

Compact Package

High Accuracy, ±3% Reading

Linearized and Temperature Compensated

Resistant to Bypass Tube Length Variation

0-250 Pa, ±50 Pa, ± 500 Pa



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Ordering Information

Measurement Range	Applicable Fluid	Model
0 to 250 Pa (0 to 1 in. H ₂ O)		D6F-PH0025AD1
-50 to +50 Pa (± 0.2 in. H ₂ O)	Air	D6F-PH0505AD3
-500 to +500 Pa (± 2 in. H ₂ O)		D6F-PH5050AD3

Note: The Sensor can be calibrated for different gas types. Consult Omron.

Characteristics

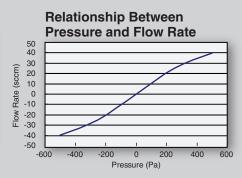
Model	D6F-PH0025AD1	D6F-PH0505AD3	D6F-PH5050AD3
Measurement Range (See Note 1)	0 to 250 Pa	± 50 Pa	± 500 Pa
Calibration Gas (See Note 2)	Air		
Port Type	Barb joint, Maximum outside diameter: 4.9mm		
Power Supply	2.3 to 3.6 VDC		
Current Consumption	6 mA max. with no load and V _{CC} of 3.3 V, GND=0 VDC, 25°C		
Resolution	12 bit		
Zero Point Tolerance (See Note 4)	± 0.2 Pa		
Span Tolerance (See Note 4)	± 3% R.D.		
Temperature Compensation	Yes		
Span shift due to Temperature Variation	± 0.5% R.D. per 10°C		
Response Time	25 ms typical at 12 bit resolution (50 ms max). The processing time is 6 ms typical at 12 bit resolution.		
Gas Flow through Sensor (See Note 3)	≤ 63 mL/min	≤ 23 mL/min	≤ 100 mL/min
Interface	l ² C		
Case Material	PPS		
Degree of Protection	IEC IP40		
Withstand Pressure	10 kPa		
Operating Temperature	-20 to 80°C (with no condensation or icing)		
Operating Humidity	35 to 85% RH (with no condensation or icing)		
Storage Temperature	-40 to 80°C (with no condensation or icing)		
Storage Humidity	35 to 85% RH (with no condensation or icing)		
Insulation Resistance	Between Sensor outer cover and lead terminals: 20 MΩ min. (at 500 VDC)		
Dielectric Strength	Between Sensor outer cover and lead terminals: 500 VAC, 50/60 Hz min. for 1 min (leakage current: 1 mA max.)		
Weight	5.2 g		

Note: 1. At standard atmospheric pressure (1013.25 hPa).

- 2. Dry gas must not contain large particles, e.g., dust, oil or mist.
- 3. Type D6F-PH is based on thermal flow principle. Air flow is needed to measure the differential pressure. Typical characteristic of air flow by differential pressure is shown in the "Engineering Data" section.
- 4. The zero point tolerance and span tolerance are independent uncertainties and add according to the principles of error propagation.

Communication

Method		I ² C	
Master/Slave		Slave / Address: HEX: 0x6C	
		BIN: 110_1100 (7 bit)	
Speed mode		Fast Mode 400kHz	
Signals			
	SCL	Serial Clock	
	SDA	Data Signal	



Note: Additional information can be found on the Omron website

Phone: 847-882-2288

www.components.omron.com

