Innovation

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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OMRON
ELECTRONIC COMPONENTS

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Ordering Information

Measurement Range	Applicable Fluid	Model
0 to 250 Pa (0 to 1 in. H_2O)	Air	**D6F-PH0025AD1**
-50 to +50 Pa (± 0.2 in. H_2O)		**D6F-PH0505AD3**
-500 to +500 Pa (± 2 in. H_2O)		**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	I^2C		
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.

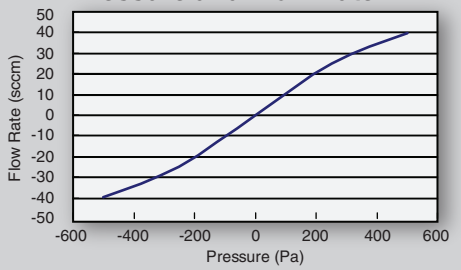
3. Type D6F-PH is based on thermal flow principle. Air flow is needed to measure the differential pressure. Typical characteristic of air flow by differential pressure is shown in the "Engineering Data" section.

4. The zero point tolerance and span tolerance are independent uncertainties and add according to the principles of error propagation.

Communication

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

Relationship Between Pressure and Flow Rate



Note: Additional information can be found on the Omron website

Phone: 847-882-2288
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