

D6F-V

MEMS Flow Sensor

▶ Air ▶ Analog

A Compact Sensor That Uses OMRON's Unique Flow Path Structure for High-performance Flow Rate Measurement.

- Anti-dust performance enhanced by OMRON's unique three-dimensional flow path structure.
- Extremely compact, measuring only 24 × 14 × 8 mm.

RoHS Compliant



Refer to the *Common Precautions for the D6F Series* on page 40.



Ordering Information

MEMS Flow Sensor

Applicable fluid	Flow velocity range	Model
Air	0 to 3 m/s	D6F-V03A1

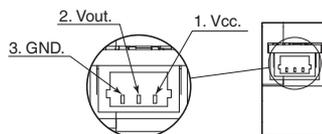
Accessory (Sold separately)

Type	Model
Cable	D6F-CABLE2
	D6F-CABLE2-L

Note: Refer to *Accessories for the D6F Series* on page 39.

Connections

D6F-V03A1



Enlarged View

Pin No. 1: Vcc
2: Vout
3: GND

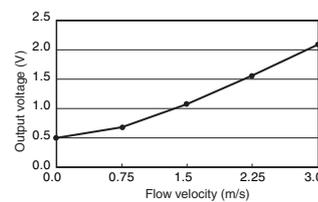
Connector SM03B-SRSS-TB (made by J.S.T. Mfg. Co.)

Use the following connectors from J.S.T. Mfg. Co. Ltd. to connect the D6F:

- Pressure-welded Connectors
 - Socket: 03SR-3S
 - Wires: AWG30
- Or
- Crimp Connectors
 - Contact: SSH-003T-P0.2
 - Housing: SHR-03V-S
- Wires: AWG32 to AWG28

Output Voltage Characteristics

D6F-V03A1

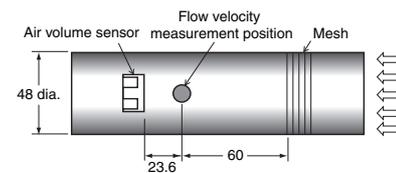


D6F-V03A1

Flow velocity m/s	0	0.75	1.5	2.25	3
Output voltage V	0.5±0.15	0.7±0.15	1.11±0.15	1.58±0.15	2±0.15

The flow velocity is the value calculated from the mass flow rate in OMRON's specified 48-mm-dia. wind tunnel. It does not indicate the flow velocity determined by the Measurement Law of Japan. The wind tunnel conditions are shown in Figure 1 below.

Figure 1: Wind Tunnel



Measurement conditions: Power supply voltage of 3.3 VDC, ambient temperature of 25°C, and dry air.

Characteristics/Performance

Model	D6F-V03A1
Flow Range (See note 1.)	0 to 3 m/s
Calibration Gas (See note 2.)	Air
Electrical Connection	Three-pin connector
Power Supply	3.15 to 3.45 VDC
Current Consumption	15 mA max. with no load, with a Vcc of 3.3 VDC, and at 25°C
Output Voltage	0.5 to 2 VDC (non-linear output, load resistance of 10 kΩ)
Accuracy	±10% FS (25°C characteristic)
Repeatability (See note 3.)	±1.5% FS
Output Voltage (Max.)	2.7 VDC (Load resistance: 10 kΩ)
Output Voltage (Min.)	0 VDC (Load resistance: 10 kΩ)
Rated Power Supply Voltage	12 VDC
Rated Output Voltage	3 VDC
Case	PBT
Degree of Protection	IEC IP40 (except for flow inlet and outlet)
Operating Temperature (See note 4.)	-10 to 60°C
Operating Humidity (See note 4.)	35% to 85%
Storage Temperature (See note 4.)	-40 to 80°C
Storage Humidity (See note 4.)	35% to 85%
Temperature Characteristics	±20% FS for 25°C characteristic at an ambient temperature of -10 to 60°C
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	5.3 g

Note: 1. Volumetric flow rate at 25°C, 101.3 kPa.

Note: 2. Dry gas. (must not contain large particles, e.g., dust, oil, or mist.)

Note: 3. Reference (typical)

Note: 4. With no condensation or icing.

Dimensions (Unit: mm)

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