

# D6F-V

MEMS Flow Sensor

## A Compact Sensor That Uses OMRON's Unique Flow Path Structure for High-Performance Flow Velocity\* Measurement.

Air Analog



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

\* The flow velocity is the value calculated from the mass flow rate in OMRON's specified wind tunnel. It does not indicate the flow velocity determined by the Measurement Law of JAPAN.

RoHS Compliant



Refer to the *Common Precautions for the D6F Series* on page 39.

## Ordering Information

### MEMS Flow Sensor

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

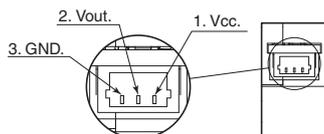
### Accessory (Sold separately)

Type	Model
Cable	D6F-CABLE2
	D6F-CABLE2-L

Note: Refer to *Accessories for the D6F Series* on page 38.

## Connections

### D6F-V03A1



Enlarged View

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

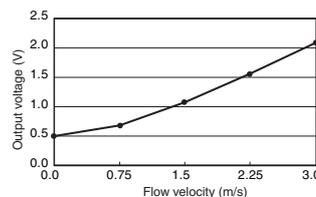
Connector SM03B-SRSS-TB (made by J.S.T. Mfg. Co.)

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

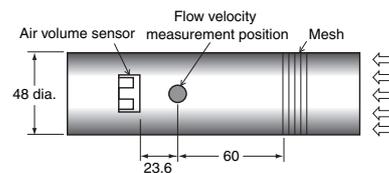


### D6F-V03A1

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

**CAD Data** Please visit our CAD Data website, which is noted on the last page.

(Unit: mm)

### MEMS Flow Sensors D6F-V03A1

**CAD Data**

