

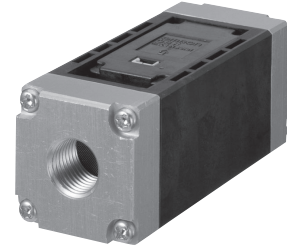
D6F-A6

MEMS Flow Sensor

High-accuracy Sensing with a Compact Body for Flow Rates up to 50 L/min.

▶ Air ▶ Gas ▶ Analog

- Accurately measures an air mass flow rate of 10 to 50 L/min.
- A compact size of 30 × 78 × 30 mm (H × W × D).



RoHS Compliant



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

Ordering Information

MEMS Flow Sensor

| Flow Port Type | Applicable fluid | Flow rate range | Model |
|----------------|------------------|-----------------|----------------------|
| Rc 1/4 thread | Air | 0 to 10 L/min | D6F-10A6-000 |
| | | 0 to 20 L/min | D6F-20A6-000 |
| | | 0 to 50 L/min | D6F-50A6-000 |
| NPT 1/8 thread | | 0 to 10 L/min | D6F-10A61-000 |
| | | 0 to 20 L/min | D6F-20A61-000 |
| | | 0 to 50 L/min | D6F-50A61-000 |

Accessory (Sold separately)

| Type | Model |
|-------|-------------------|
| Cable | D6F-CABLE1 |

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

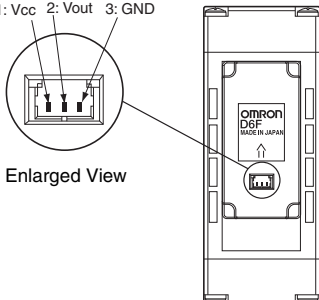
Connections

D6F-10A6-000 **D6F-10A61-000**
D6F-20A6-000 **D6F-20A61-000**
D6F-50A6-000 **D6F-50A61-000**

Pin No. 1: Vcc
 2: Vout
 3: GND
 Connector 53398-03** (Made by Molex Japan)

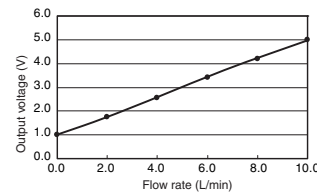
Use the following connectors for connections to the D6F:
 Housing 51021-0300 (Made by Molex Japan)
 Terminals 50079 (Made by Molex Japan)
 Wires AWG28 to AWG26

1: Vcc 2: Vout 3: GND

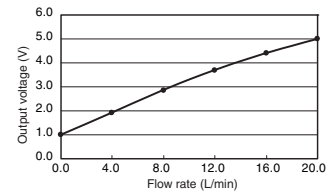


Output Voltage Characteristics

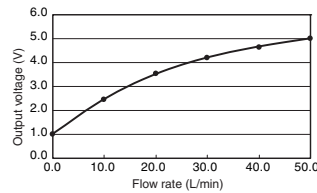
D6F-10A6-000
D6F-10A61-000



D6F-20A6-000
D6F-20A61-000



D6F-50A6-000
D6F-50A61-000



D6F-10A6-000/D6F-10A61-000

| Flow rate L/min (normal) | 0 | 2.0 | 4.0 | 6.0 | 8.0 | 10.0 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Output voltage V | 1.00 ±0.12 | 1.75 ±0.12 | 2.60 ±0.12 | 3.45 ±0.12 | 4.25 ±0.12 | 5.00 ±0.12 |

D6F-20A6-000/D6F-20A61-000

| Flow rate L/min (normal) | 0 | 4 | 8 | 12 | 16 | 20 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Output voltage V | 1.00 ±0.12 | 1.93 ±0.12 | 2.87 ±0.12 | 3.70 ±0.12 | 4.41 ±0.12 | 5.00 ±0.12 |

D6F-50A6-000/D6F-50A61-000

| Flow rate L/min (normal) | 0 | 10 | 20 | 30 | 40 | 50 |
|--------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Output voltage V | 1.00 ±0.12 | 2.45 ±0.12 | 3.51 ±0.12 | 4.20 ±0.12 | 4.66 ±0.12 | 5.00 ±0.12 |

Measurement conditions: Power supply voltage of 12±0.1 VDC, ambient temperature of 25±5°C, and ambient humidity of 35% to 75%.

Characteristics/Performance

| Model | D6F-10A6-000 | D6F-20A6-000 | D6F-50A6-000 | D6F-10A61-000 | D6F-20A61-000 | D6F-50A61-000 |
|-------------------------------------|--|---------------|---------------|----------------|---------------|---------------|
| Flow Range (See note 1.) | 0 to 10 L/min | 0 to 20 L/min | 0 to 50 L/min | 0 to 10 L/min | 0 to 20 L/min | 0 to 50 L/min |
| Calibration Gas (See note 2.) | Air | | | | | |
| Flow Port Type | Rc 1/4 thread | | | NPT 1/8 thread | | |
| Electrical Connection | Three-pin connector | | | | | |
| Power Supply | 10.8 to 26.4 VDC | | | | | |
| Current Consumption | 15 mA max. with no load, with a Vcc of 12 to 24 VDC, and at 25°C | | | | | |
| Output Voltage | 1 to 5 VDC (non-linear output, load resistance of 10kΩ min.) | | | | | |
| Accuracy | ±3% FS (25°C characteristic) | | | | | |
| Repeatability (See note 3.) | ±0.3% FS | | | | | |
| Output Voltage (Max.) | 5.7 VDC (Load resistance: 10 kΩ) | | | | | |
| Output Voltage (Min.) | 0 VDC (Load resistance: 10 kΩ) | | | | | |
| Rated Power Supply Voltage | 26.4 VDC | | | | | |
| Rated Output Voltage | 6 VDC | | | | | |
| Case | PPS/aluminum alloy | | | | | |
| Degree of Protection | IEC IP40 (Excluding tubing sections.) | | | | | |
| Withstand Pressure | 500 kPa | | | | | |
| Pressure Drop (See note 3.) | 0.10 kPa | 0.28 kPa | 1.44 kPa | 0.15 kPa | 0.52 kPa | 2.31 kPa |
| Operating Temperature (See note 4.) | -10 to 60°C | | | | | |
| Operating Humidity (See note 4.) | 35% to 85% | | | | | |
| Storage Temperature (See note 4.) | -30 to 80°C | | | | | |
| Storage Humidity (See note 4.) | 35% to 85% | | | | | |
| Temperature Characteristics | ±3% 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 | 103 g | | | | | |

Note: 1. Volumetric flow rate at 0°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)

MEMS Flow Sensors

Mounting Hole Dimensions

