

D6F-N2/-L2

MEMS Flow Sensor

A Compact, High-accuracy Sensor That Measures Low Flow Rates.

- High accuracy of $\pm 3\%$ FS.
- Flow rates can be measured without being affected by temperature or pressure.

Gas Analog



RoHS Compliant



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

Ordering Information

MEMS Flow Sensor

| Applicable fluid | Flow rate range | Model |
|-------------------|-----------------|--------------|
| Natural gas (13A) | 0 to 1 L/min | D6F-01N2-000 |
| | 0 to 2 L/min | D6F-02N2-000 |
| | 0 to 5 L/min | D6F-05N2-000 |
| LP gas | 0 to 2 L/min | D6F-02L2-000 |

Accessory (included)

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

Connections

D6F-01N2-000

D6F-02N2-000

D6F-05N2-000

D6F-02L2-000

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

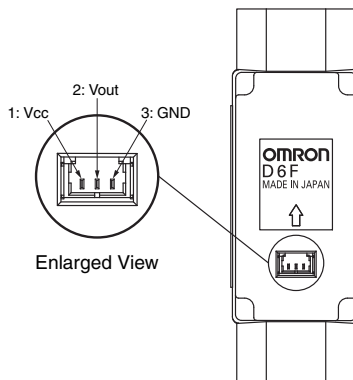
Connector 53398 (Made by Molex Japan)

Use the following connectors for connections to the D6F:

Housing 51021 (Made by Molex Japan)

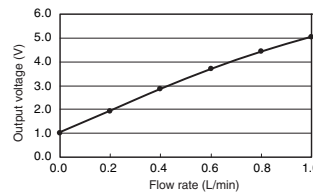
Terminals 50079 (Made by Molex Japan)

Wires AWG28 to AWG26

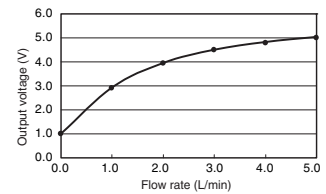


Output Voltage Characteristics

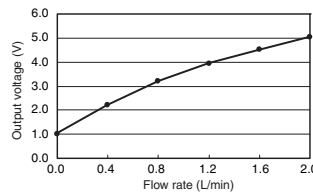
D6F-01N2-000



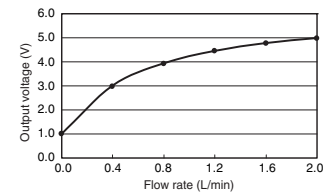
D6F-05N2-000



D6F-02N2-000



D6F-02L2-000



D6F-01N2-000

| Flow rate L/min (normal) | 0 | 0.2 | 0.4 | 0.6 | 0.8 | 1.0 |
|--------------------------|------------|------------|------------|------------|------------|------------|
| Output voltage V | 1.00 | 1.90 | 2.81 | 3.64 | 4.37 | 5.00 |
| | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 |

D6F-02N2-000

| Flow rate L/min (normal) | 0 | 0.4 | 0.8 | 1.2 | 1.6 | 2.0 |
|--------------------------|------------|------------|------------|------------|------------|------------|
| Output voltage V | 1.00 | 2.20 | 3.20 | 3.98 | 4.55 | 5.00 |
| | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 |

D6F-05N2-000

| Flow rate L/min (normal) | 0 | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 |
|--------------------------|------------|------------|------------|------------|------------|------------|
| Output voltage V | 1.00 | 2.91 | 3.92 | 4.47 | 4.79 | 5.00 |
| | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 | ± 0.12 |

D6F-02L2-000

| Flow rate L/min (normal) | 0 | 0.4 | 0.8 | 1.2 | 1.6 | 2.0 |
|--------------------------|------------|------------|------------|------------|------------|------------|
| Output voltage V | 1.00 | 3.02 | 3.95 | 4.47 | 4.79 | 5.00 |
| | ± 0.30 | ± 0.08 | ± 0.08 | ± 0.08 | ± 0.08 | ± 0.12 |

Measurement conditions: Power supply voltage of 12 ± 0.1 VDC, ambient temperature of $25 \pm 5^\circ\text{C}$, and ambient humidity of 35% to 75%.

Characteristics/Performance

| Model | D6F-01N2-000 | D6F-02N2-000 | D6F-05N2-000 | D6F-02L2-000 |
|-------------------------------------|--|---------------|--------------|---|
| Flow Range (See note 1.) | 0 to 1 L/min | 0 to 2 L/min. | 0 to 5 L/min | 0 to 2 L/min. |
| Calibration Gas (See note 2.) | Natural gas (13A) | | | Propane gas |
| Flow Port Type | Rc 1/4 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 10 kΩ) | | | |
| Accuracy | ±3% FS (25°C characteristic) | | | ±2% to ±7.5% F.S. (25°C characteristic) |
| Repeatability (See note 3.) | ±0.2% FS | | | ±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 | Aluminum alloy | | | |
| Degree of Protection | IEC IP40 (Excluding tubing sections.) | | | |
| Withstand Pressure | 200 kPa | | | |
| Pressure Drop (See note 3.) | 0.017 kPa | 0.033 kPa | 0.10 kPa | 0.14 kPa |
| 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 | ±3% FS for 25°C characteristic at -10 to 60°C | | | ±4% FS for 25°C characteristic at -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 | 35.3 g | | | |

Note: 1. Volumetric flow rate at 0°C, 101.3 kPa.

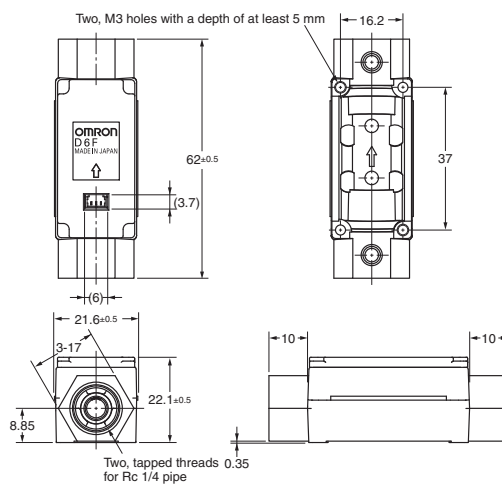
Note: 2. Dry gas. (must not contain large particles, e.g., dust, oil, or mist.)

Note: 3. Reference (typical)

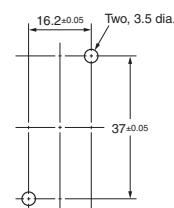
Note: 4. With no condensation or icing.

Dimensions (Unit: mm)

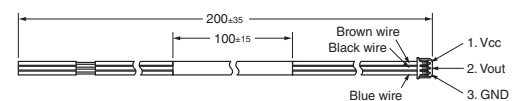
D6F-01N2-000
D6F-02N2-000
D6F-05N2-000
D6F-02L2-000



Mounting Hole Dimensions



Cable (included): D6F-CABLE1



AMEYA360

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