

## MEMS Flow Sensor

**D6F-01N, -02L, -05N****High Accuracy Mass Flow Sensing for Natural Gas and Propane Applications**

- Small size
- Fast response
- Applicable to air, non-corrosive gas, natural gas and propane
- Applications include: analysis apparatus, combustion control
- RoHS Compliant

**Ordering Information**

Case	Calibration gas	Flow range**	Model
Aluminum	Natural Gas*	0-1L/min	D6F-01N2-000
	Propane Gas*	0-2L/min	D6F-02L2-000
	Natural Gas*	0-5L/min	D6F-05N2-000

\* Contact Omron for other gases.

\*\*Mass flow converted to volumetric flow (standard liters per minute) at 0°C and 1 atm.

**Ratings****■ Absolute Maximum Rating**

Item	Symbol	Rating	Unit
Power supply	$V_{CC}$	26.4	VDC
Output voltage	$V_{OUT}$	6	VDC

**■ Electrical Performance**

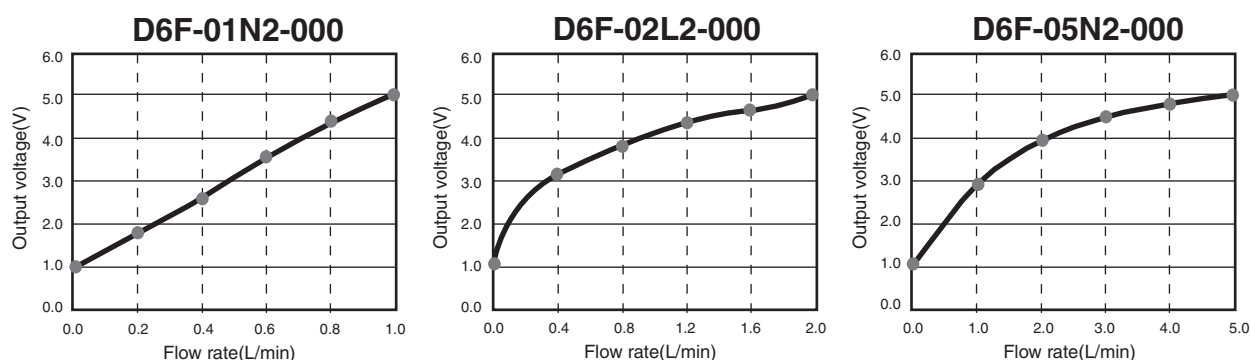
Item	Symbol	Condition	Min.	Max.	Unit
Power supply	$V_{CC}$	—	10.8	26.4	VDC
Operating temperature	$T_{OPR}$	No condensation or icing	-10	60	°C
Output voltage (max.)	$V_{OH}$	$V_{CC} = 12 \text{ to } 24 \text{ VDC } I_{OH} = 5 \text{ mA}$	5	5.7	VDC
Output voltage (min.)	$V_{OL}$	$V_{CC} = 12 \text{ to } 24 \text{ VDC } I_{OH} = 5 \text{ mA}$	0	1	VDC

# Characteristics

<b>Model</b>	<b>D6F-01N2-000</b>	<b>D6F-02L2-000</b>	<b>D6F-05N2-000</b>
<b>Flow rate @ 0°C and 101.3 kPa</b>	0-1L/min	0-2L/min	0-5L/min
<b>Joint type</b>	Rc 1/4 screw (1/4" BSPT)		
<b>Case material</b>	Aluminum		
<b>Applicable gas*</b>	Natural Gas	Propane	Natural Gas
<b>Withstand pressure (max.)</b>	200kPa (about 30 psi)		
<b>Accuracy</b>	±3% F.S. max		
<b>Operating temperature</b>	-10 to 60°C (with no icing or condensation)		
<b>Storage temperature</b>	-40 to 80°C (with no icing or condensation)		
<b>Operating and Storage humidity</b>	85% RH max (with no icing or condensation)		
<b>Output signal</b>	1 to 5 VDC, Analog Output		
<b>Current consumption</b>	15 mA max. (No-Load with V <sub>CC</sub> = 12 to 24 VDC, V <sub>SS</sub> = 0V and 25°C)		
<b>Insulation resistance</b>	20MΩ min. at 500 VDC, between lead terminal and case		
<b>Dielectric strength</b>	500 VAC, 50/60 Hz, for 1 minute. (Leakage current typ <1 mA.), between the lead terminals and the base		
<b>Response Time (reference)</b>	150 mS, typical		

\* Contact Omron for other gases.

## Operating Characteristics



### D6F-01N2-000

<b>Flow Rate (LPM)</b>	0	0.2	0.4	0.6	0.8	1.0
<b>Output Voltage (VDC)</b>	1.00 ± 0.12	1.90 ± 0.12	2.81 ± 0.12	3.64 ± 0.12	4.37 ± 0.12	5.00 ± 0.12

### D6F-02L2-000

<b>Flow Rate (LPM)</b>	0	0.4	0.8	1.2	1.6	2.0
<b>Output Voltage (VDC)</b>	1.00 ± 0.30	3.02 ± 0.08	3.95 ± 0.08	4.47 ± 0.08	4.79 ± 0.08	5.00 ± 0.12

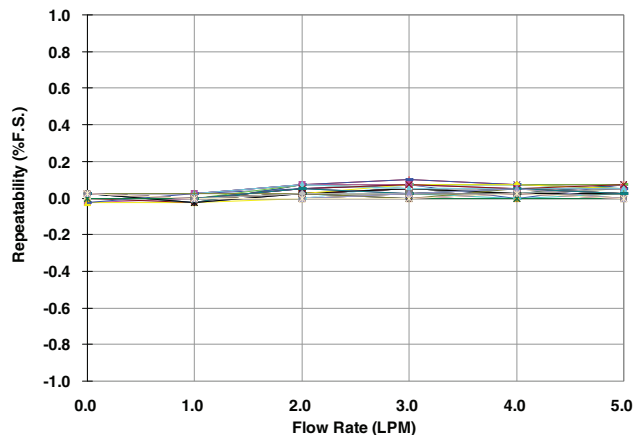
### D6F-05N2-000

<b>Flow Rate (LPM)</b>	0	1.0	2.0	3.0	4.0	5.0
<b>Output Voltage (VDC)</b>	1.00 ± 0.12	2.91 ± 0.12	3.92 ± 0.12	4.47 ± 0.12	4.79 ± 0.12	5.00 ± 0.12

# Test Results (typical performance)

## D6F-05N2

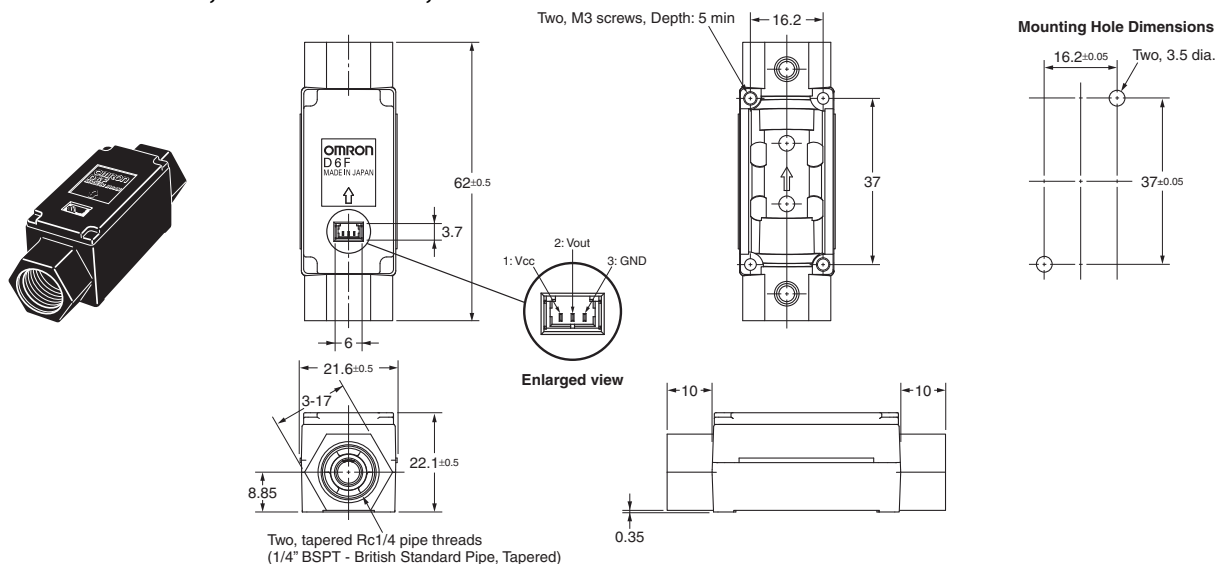
(5 samples, repeated 10 times each)



## Dimensions

Unit: mm

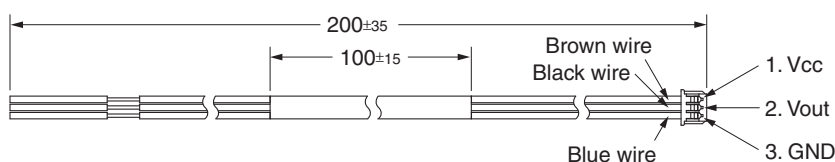
### D6F-01N2-000, D6F-02L2-000, D6F-05N2-000



**Note:** Mount using an M3 pan head screw, tightened to 0.59 N•m max. torque.

### Applicable Cable for D6F (included)

part number: D6F-CABLE1 (for replacement cables)



Housing: Molex - 51021  
Terminal: Molex - 50079  
Wire: 26-28 AWG

**Note:** Be sure to read the precautions and information common to all D6F sensors, contained in the Technical User's Guide, "D6F Technical Information" for correct use.

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**ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.**  
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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**OMRON ELECTRONIC  
COMPONENTS LLC**

55 E. Commerce Drive, Suite B  
Schaumburg, IL 60173

**847-882-2288**

**OMRON ON-LINE**

Global - <http://www.omron.com>

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