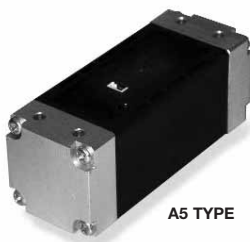


Compact, intelligent sensors featuring MEMS technology for precision mass airflow measurement

- Precision unidirectional mass airflow up to 50 LPM
- Stable output across full scale
- Horizontal mounting feature with *NBR 'O' ring (A5 Type), Rc 1/4 screw (A6 Type)
- Compact size 78 (L) x 30 (W) x 30 (H) mm
- Low power consumption



A5 TYPE



A6 TYPE

iSensors

Application Examples

- Industrial processes
- Oxygen concentrators / conservators
- Leak detection
- Spectroscopy
- Mass flow controllers
- Scientific / test equipment
- Environmental comfort controls
- Fuel cell controls

Ordering Information

Model**	Case	Applicable Gas	Flow Range
D6F-10A5-000 D6F-10A6-000	PPS / Aluminium Alloy	Air*	0 – 10 LPM
D6F-20A5-000 D6F-20A6-000	PPS / Aluminium Alloy	Air*	0 – 20 LPM
D6F-50A5-000 D6F-50A6-000	PPS / Aluminium Alloy	Air*	0 – 50 LPM
D6F-CABLE1			

*Dry gas must not contain large particles, eg. dust, oil, mist.

**NBR 'O' Ring = A5 type, Rc 1/4 screw = A6 type

■ Ratings

Absolute maximum rating

Item	Symbol	Ratings	Unit
Power Supply	V _{CC}	26.4	VDC
Output Voltage	V _{OUT}	6	VDC

■ Electrical Performance

Recommended operation condition and DC characteristic

Item	Term	Condition	Min.	Typ.	Max.	Unit
Power Supply	V _{CC}	–	10.8	–	26.4	VDC
Operating Temperature	T _{OPR}	–	-10	–	60	°C
Output Voltage (Max.)	V _{OH}	Load resistance 10kΩ	–	–	5.7	VDC
Output Voltage (Min.)	V _{OL}	Load resistance 10kΩ	0	–	–	VDC

MEMS Mass Flow Sensor – D6F-10A5/A6/20A5/A6/50A5/A6

■ Basic Performance

0 to 10, 0 to 20 and 0 to 50L/min (Normal) volumetric flow rate at 0°C, 101.3kPa.

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

D6F-10A5-000

D6F-10A6-000

Flow Rate (LPM)	0	2	4	6	8	10
Output Voltage (VDC)	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-20A5-000

D6F-20A6-000

Flow Rate (LPM)	0	4	8	12	16	20
Output Voltage (VDC)	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-50A5-000

D6F-50A6-000

Flow Rate (LPM)	0	10	20	30	40	50
Output Voltage (VDC)	1.00 ± 0.12	2.45 ± 0.12	3.51 ± 0.12	4.20 ± 0.12	4.66 ± 0.12	5.00 ± 0.12

■ Characteristics

Degree of Protection	IP40
Joint Type	Manifold Mount with 'O' Ring (A5 Type), Rc 1/4 (A6 Type)
Applicable Gas	Air
Electrical Connection	Connector (3 wire) - see Dimensions (note 1) for details
Accuracy	$\pm 3\%$ F.S. max of detected characteristics at 25°C
Repeatability*	$\pm 0.3\%$ F.S. (for 10/20 type) $\pm 0.7\%$ F.S. (for 50 Type)
Withstand Pressure	500 kPa
Pressure Drop*	0.8 kPa (for 10A5), 2.9 kPa (for 20A5), 17.2 kPa (for 50A5), 0.3kPa (for 10A6), 1.2kPa (for 20A6), 7.2 kPa (for 50A6)
Temperature Characteristics	$\pm 3\%$ F.S. max. of detected characteristics at 25°C (within -10 to 60°C)
Operating Temperature	-10 to $+60^\circ\text{C}$ (with no icing or condensation)
Operating Humidity	85%RH max. (with no icing or condensation)
Storage Temperature	-30 to $+80^\circ\text{C}$ (with no icing or condensation)
Storage Humidity	85%RH max. (with no icing or condensation)
Current Consumption	Max 15mA (no load, $V_{cc} = 12$ to 24 VDC, $V_{ss} = \text{GND} = 0\text{V}$, 25°C)
Insulation Resistance	$20\text{M}\Omega$ (500VDC between lead terminals and case)
Dielectric Strength	500VAC, 50/60Hz for 1 minute (leakage current typ. $< 1\text{mA}$) between lead terminals and case
Weight	102.56g

* Typical value - for reference only

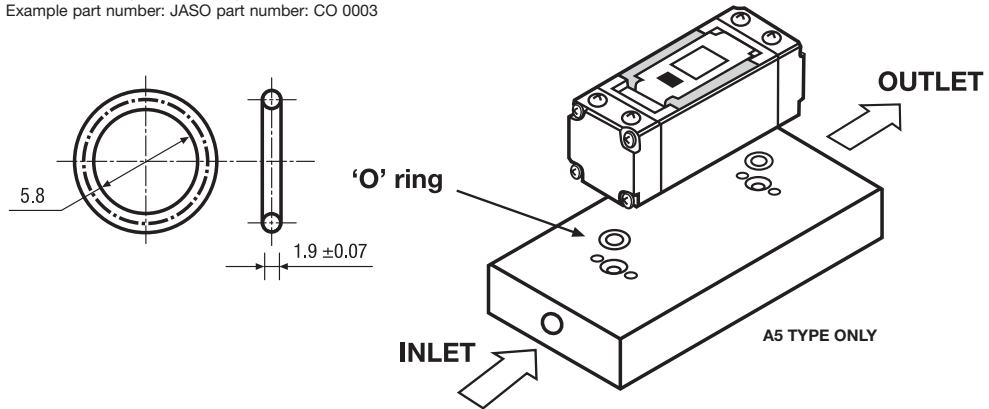
■ Installation

Tighten screw with 0.59Nm or less torque. Use M3 pan head screw.
Please seal to INLET and OUTLET with the 'O' ring etc.
Please install the product as shown below.

Recommended 'O' ring for sealing inlet and outlet orifice

Material: NBR70 (recommended)

Example part number: JASO part number: CO 0003



■ Precautions

1. Avoid use in excessively dirty, wet environments
2. Do not use in the presence of flammable gases (e.g. hydrogen, methane, ethane and liquefied petroleum gas. In addition, do not use with corrosive gases (eg chlorine, sulphur, acids, alkalis etc).
3. Install in the direction of the arrow indicated.
4. For best results (optimum accuracy), mount horizontally.
5. Use suitable M3 screws for mounting. Do not exceed a fixing torque of 0.59 Nm.
6. Do not modify D6F- in any way.
7. Do not place any object in or close to the inlet and outlet orifices.
8. Do not use the sensor in any of the following environments:
 - a location that receives radiant heat from the sun or apparatus
 - a place where intense light may radiate down
 - where fast changing temperatures occur
 - locations prone to freezing, high humidity, condensation
 - places where large magnitudes of vibration or shock could occur
9. Noise countermeasures: VERY IMPORTANT: Take suitable precautions to minimise the effects and potential for induced electrical noise. Install away from apparatus that generates strong high frequencies, surges and spikes. Take particular care to install away from AC power transformers, live mains power lines and high power magnetic circuits. Attach a surge suppressor and a noise filter to the peripheral equipment.
10. Ensure good grounding is achieved by grounding the GND terminal to the peripheral equipments main ground frame connection and its associated regulated power supply.
11. Do not make a direct solder connection to the integral terminals. It is recommended you use the optional cable 'D6F-CABLE1' for attachment and to ensure correct connection.
12. D6F is a precision component. Keep in original packaging and remove only when ready for installation. Damage may occur if subjected to excessive force (e.g. dropped or kicked). Any item suspected to be damaged should be discarded.
13. Immediately following installation, a qualified person should perform checks to ensure safe, satisfactory operation.

MEMS Mass Flow Sensor – D6F-10A5/A6/20A5/A6/50A5/A6

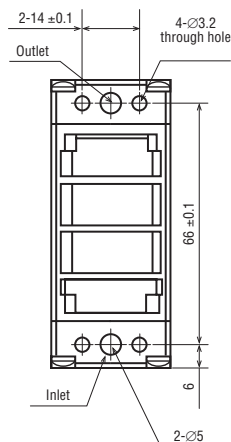
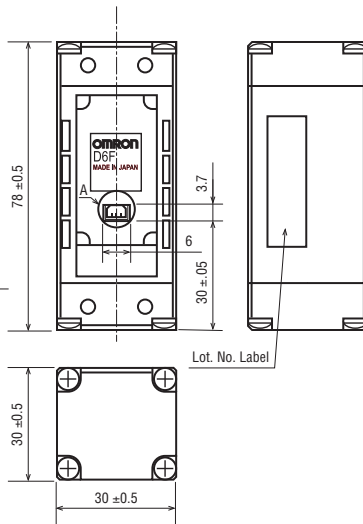
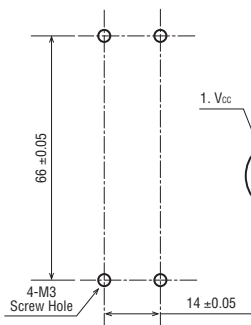
■ Dimensions

All dimensions are shown in millimetres.

D6F-10A5-000
D6F-20A5-000
D6F-50A5-000

NOTE 1 Use an attached connector
 Housing: MOLEX-51021
 Terminal: MOLEX-50079
 Wire: AWG26, 28
 Circuit number: Refer to enlargement A.

NOTE 2 Installation hole recommended size.

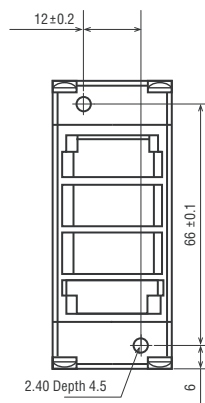
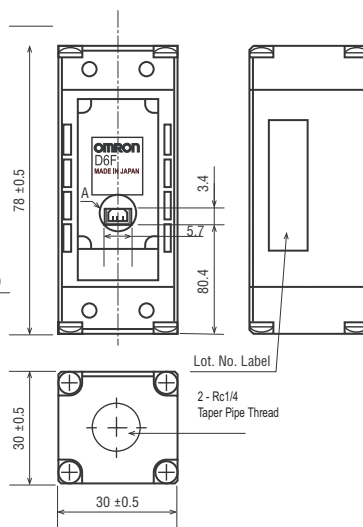
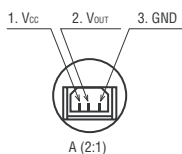


D6F-10A6-000
D6F-20A6-000
D6F-50A6-000

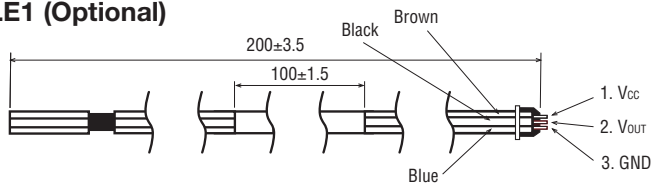
NOTE 1 Bind tight with 0.59N.m or less torque
 Use M3 pan head screw

NOTE 2 Use an attached connector
 Housing: MOLEX-51021
 Terminal: MOLEX-50079
 Wire: AWG26, 28
 Circuit number: Refer to enlargement A

NOTE 3 The connection must use taper pipe thread R1/4
 Moreover, please give the tightening torque
 as 5N.m or less



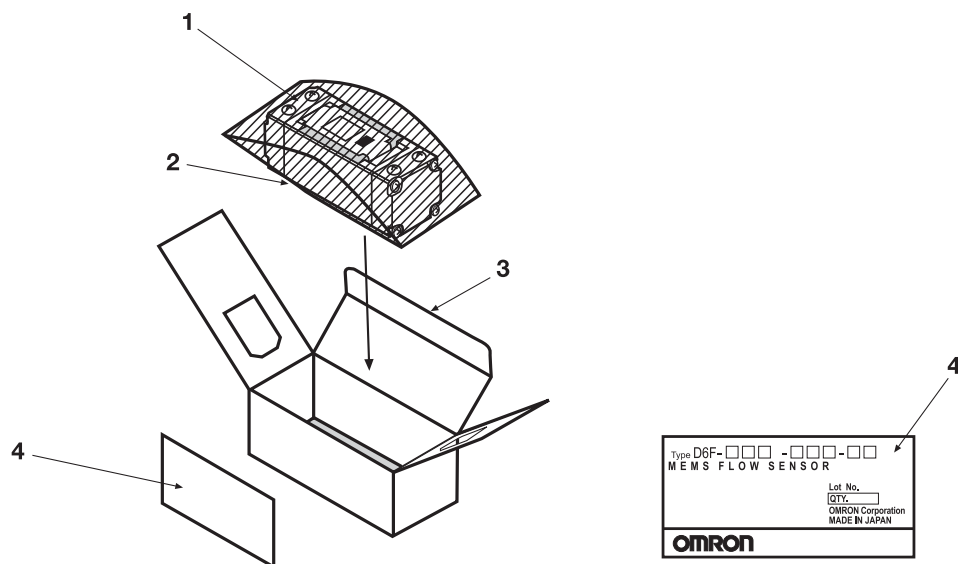
■ D6F-CABLE1 (Optional)



MEMS Mass Flow Sensor – D6F-10A5/A6/20A5/A6/50A5/A6

■ Packaging

No.	Name	Material
1	D6F	–
2	Polyethylene bag	Polyethylene
3	Box	Coated board paper
4	Label (Bar code)	–



■ Change in specifications

Product specifications and accessories may be changed at any time based on improvements and other reasons. Consult with your Omron representative at any time to confirm actual specifications of purchased product.

■ Warranty

Omron corporation manufactures products to the highest standards and warrants that all products it manufactures are free of defects and faulty workmanship.

Please contact your local Omron representative for warranty information.

We provide application assistance personally and through our literature including our website for guidance only. It is the customers full responsibility to determine suitability of product in any intended application.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.