

## Compact, intelligent sensors featuring MEMS precision technology for repeatable airflow detection

- RoHS / Lead-free and lead solder compatible
- Precision uni-directional air velocity detection
- Integral passive Dust Segregation System (DSS)
- Ultra compact size 24 (L) x 14 (W) x 8 (H) mm



iSensors

## Application Examples

- Cassette (ceiling / suspended), multi-modular air conditioners
- Duct connected heating and air conditioning systems
- Alternative for single point Pitot tube
- Alternative for thermal dispersion measurement
- Air & water cooled chillers, indoor packaged AC systems
- Window / split, multi-split residential AC coolers
- Air purifiers, dehumidifiers
- Fan assisted space heaters
- Air cooled, high power indoor lighting
- Mission critical PC, Workstation ventilation
- 19" rack / tray mounted PSU watchdog ventilation systems

## Ordering Information

Model	Case	Applicable Gas	Flow Range
D6F-V03A1	Thermoplastic resin	Air*	0-3 m /sec
D6F-CABLE2			

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

## Rating

Absolute maximum rating

Item	Term	Ratings	Unit
Power-supply voltage	V <sub>CC</sub>	12	VDC
Output voltage	V <sub>OUT</sub>	3.0	VDC

## Electrical Performance

Recommended operation condition and DC characteristic

Item	Term	Condition	MIN	TYP	MAX	Unit
Power-supply voltage	V <sub>CC</sub>	–	3.15	3.3	3.45	VDC
Operating temperature	T <sub>OPR</sub>	–	-10	–	60	°C
Maximum output voltage	V <sub>OH</sub>	Load resistance 10kR	–	–	2.7	VDC
Minimum output voltage	V <sub>OL</sub>	Load resistance 10kR	0	–	–	VDC

## ■ Basic Performance

Measurement condition: Power-supply voltage 3.3VDC, ambient temperature 25°C and dry air.

### D6F-V03A1

Flow Rate (m/sec)	0	0.75	1.50	2.25	3.00
Output Voltage (VDC)	0.50 ±0.15	0.70 ±0.15	1.11 ±0.15	1.58 ±0.15	2.0 ±0.15

Note 1: Air velocity. D6F-V is optimally adjusted for air velocity detection, derived from mass air-flow measurement according to air in-house test method using a wind tunnel phi 48 mm.

## ■ Characteristics

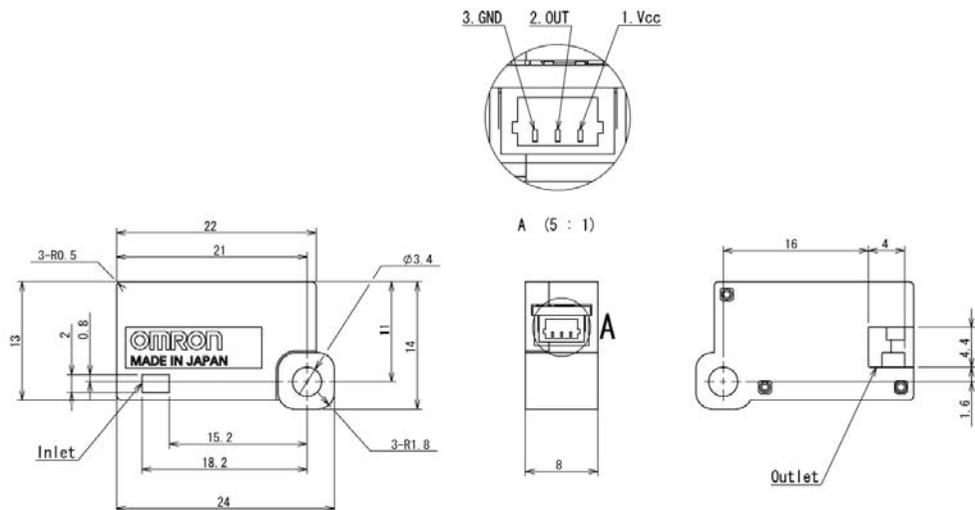
Degree of Protection	IP40
Applicable Gas	Air
Electrical Connection	Connector 3 wire
Output Signal	Analog output 0.5 to 2 VDC (non-linear output) Load resistance Min.10kΩ
Current Consumption	Max 15mA (no load, V <sub>CC</sub> =3.3VDC, V <sub>SS</sub> = GND = 0V, 25°C)
Accuracy	±10%
Insulation Resistance	20 Mohm Min. (DC500V between lead terminal and the case)
Dielectric Strength	500VAC, 50/60Hz for 1 minute (leakage current typ. <1mA) between lead terminals and case
Supply Voltage	3.15 to 3.45 VDC
Operating Temperature	-10 to 60°C (with no ice or dew condensation)
Operating Humidity	85%RH max. (with no ice or dew condensation)
Storage Temperature	-40 to 80°C (with no ice or dew condensation)
Storage Humidity	85%RH max. (with no ice or dew condensation)
Weight	5.27g

## ■ Precautions

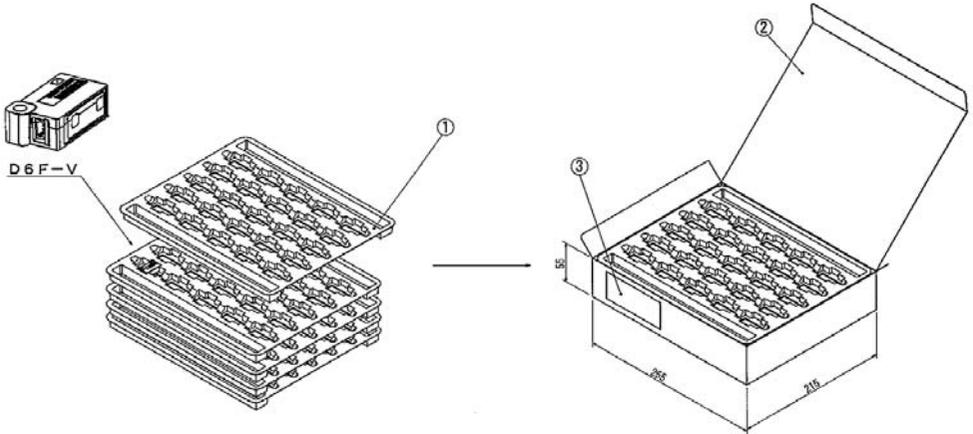
1. Avoid use in excessively dirty, wet environments
2. Do not use in the presence of flammable gases (e.g. hydrogen, methane, ethane and liquefied petroleum gas. In addition, do not use with corrosive gases (eg chlorine, sulphur, acids, alkalis etc).
3. Install in the direction of the arrow indicated.
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-CABLE2' 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.

## Dimensions

All dimensions are shown in millimetres.



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.