

# MEMS Air Velocity Sensor D6F-V03A1

**Unique dust separating structure, developed by OMRON, in a compact and highly efficient FLOW-SENSOR.**



- Unique dust segregation structure.
- +/-10% Full-Scale repeatable accuracy achieves consistent air velocity measurement, in a cost efficient package.
- Applications include clogged-filter detection and air velocity.
- RoHS Compliant

## Ordering Information

Description	Case	Applicable Gas	Flow Range	Model
Velocity Sensor	PBT	Air (See note 1.)	0-3 m/sec	D6F-V03A1
Cable Connector Assembly	- - -	- - -	- - -	D6F-CABLE2

**Note:** 1. Dry gas must not contain large particles, eg dust, oil, mist.  
2. Cable Assembly is sold separately.

## Application examples

- Cassette (ceiling / suspended), multi-modular air conditioners
- Duct connected heating and air conditioning systems
- 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
- Watchdog ventilation systems

## Ratings

### Absolute maximum rating

Item	Symbol	Rating	Unit
Power supply	V <sub>CC</sub>	12.0	VDC
Output voltage	V <sub>OUT</sub>	3.0	VDC

### Electrical Performance

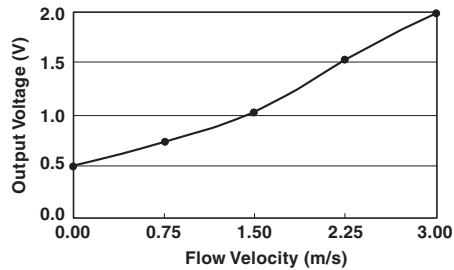
Item	Symbol	Condition	Min.	Max.	Unit
Power supply	V <sub>CC</sub>	—	3.15	9.45	VDC
Operating temperature	T <sub>OPR</sub>	No condensation or icing	-10	60	°C
Output voltage (max.)	V <sub>OH</sub>	Load resistance: 10kΩ	- - -	2.7	VDC
Output voltage (min.)	V <sub>OL</sub>	Load resistance: 10kΩ	0	- - -	VDC

# Characteristics

Model	D6F-V03A1
Flow Range	0 – 3 m/s @ 25°C, 1 atmosphere
Case Material	Thermoplastic resin
Applicable Gas	Air
Operating Temperature	-10 to 60°C (with no icing or condensation)
Storage Temperature	-40 to 80°C (with no icing or condensation)
Operating and Storage Humidity	85% RH max. (with no icing or condensation)
Power Supply Voltage	3.15 to 9.45 VDC
Output Signal	0.5 to 2 VDC, Analog output (non-linear output) (Load resistance: 10kΩ min.)
Current Consumption	15mA max. (No-Load with V <sub>CC</sub> = 3.3 VDC and 25°C)
Insulation Resistance	20MΩ min. at 500 VDC, between lead terminal and case
Dielectric Strength	500VAC, 50/60Hz, for 1 minute. (Leakage current typ < 1mA), between the lead terminals and case

## Operating Characteristics

### D6F-V03A1



### D6F-V03A1

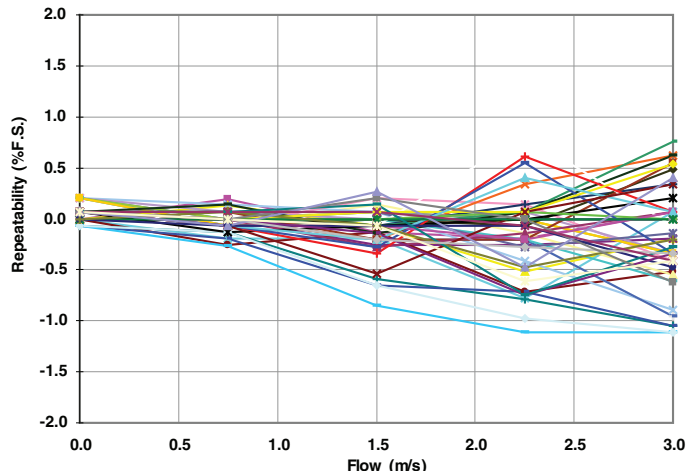
Flow Velocity (m/sec)	0	0.75	1.50	2.25	3.00
Output Voltage (VDC)	0.50±0.15	0.70±0.15	1.11±0.15	1.58±0.15	2.00±0.15

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

- Note:**
- Air velocity is the value converted from the mass-flow in OMRON regulation wind tunnel phi48mm.
  - The air velocity, set to the Measurement Law, is not shown. Please confirm in a real use environment in use.
  - Temperature characteristics:  
Over ambient temperature range -10 to +60°C: within ±20% F.S. of detected characteristics  
Of at +25°C.

# Test Results (typical performance)

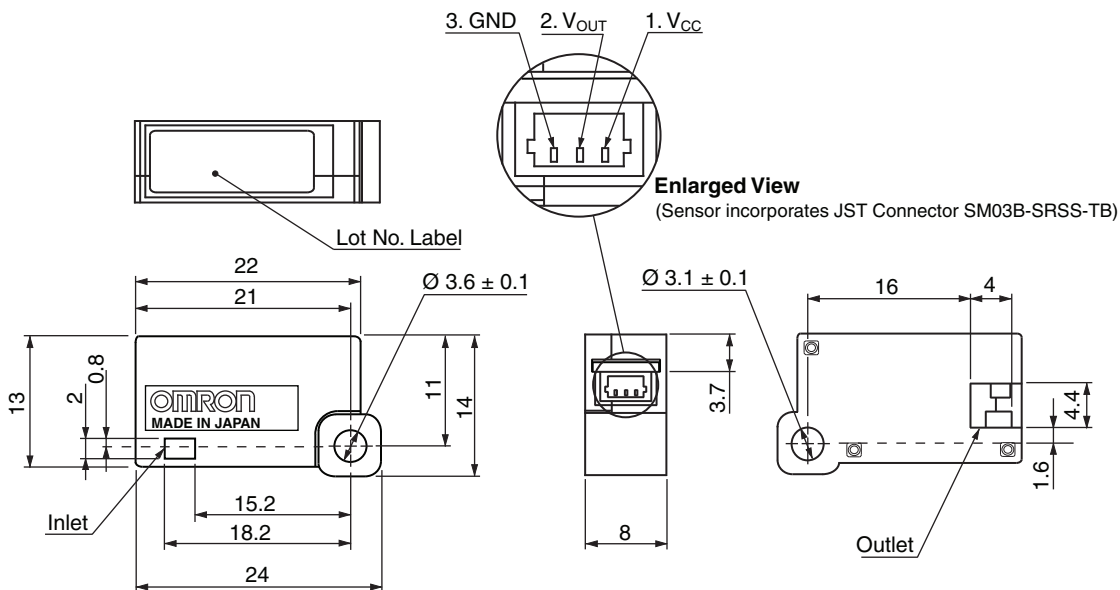
(5 samples, repeated 10 times each)



## Dimensions

Unit: mm

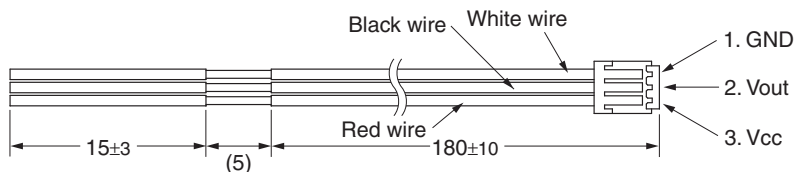
### D6F-V03A1



Note: Mount using M3 panhead screws, tightened to 0.59 N•m max. torque

### Applicable Cable for D6F-V03A1 (Optional - sold separately)

part number: D6F-CABLE2



JST Connector;  
 Housing: SHR-03V-S-B or SHR-03V-2  
 Terminal: SH-003T-P0.2  
 Wire: 28-32 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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