MEMS Air Velocity Sensor
D6F-W

MEMS precision technology for repeatable airflow velocity detection.

- Precision uni-directional air velocity detection with ±5% full-scale repeatable accuracy.
- Integral passive Dust Segregation System (DSS) prevents contamination of sensor element.
- Compact size: 39 (L) x 20 (W) x 9 (H) mm
- Output signal amplified & temperature compensated.
- User friendly - no adjustment necessary.
- RoHS Compliant

Ordering Information

Description	Case	Applicable Gas	Flow Range	Model
Velocity Sensor	PPS	Air (See note 1.)	0-1 m/sec	**D6F-W01A1**
			0-4 m/sec	**D6F-W04A1**
			0-10 m/sec	**D6F-W10A1**
Cable Connector Assembly	- - -	- - -	- - -	**D6F-W CABLE**

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

Specifications

■ Characteristics

Models	D6F-W01A1	D6F-W04A1	D6F-W10A1
Flow Range (See note 1.)	0 to 1 m/s	0 to 4 m/s	0 to 10 m/s
Applicable Gas (See note 2.)	Air		
Electrical Connection	Connector (3 wire)		
Power Supply	10.8 to 26.4 VDC		
Current Consumption	Max. 15 mA (no load, Vcc = 12 to 24VDC, 25°C)		
Operating Output Voltage (VDC)	1 to 5 VDC		
Output Voltage (Max.)	5.7 VDC (Lead resistance 10kΩ)		
Output Voltage (Min.)	0 VDC (Lead resistance 10kΩ)		
Accuracy	± 5% F.S. max. of detected characteristics at 25 °C		
Repeatability (See note 3.)	± 0.4% F.S.		
Case Material	PPS		
Degree of Protection	IP40		
Operating Temperature	-10 to 60°C (with no icing or condensation)		
Operating Humidity	35 to 85% RH (with no icing or condensation)		
Storage Temperature	-40 to 80°C (with no icing or condensation)		
Storage Humidity	35 to 85% RH (with no icing or condensation)		
Temperature Characteristics	± 5% F.S. max. of detected characteristics at 25 °C (within -10 to 60°C)		
Insulation Resistance	20 MΩ (500 VDC between lead terminal and the case)		
Dielectric Strength	500 VAC, 50/60 Hz for 1 minute. (Leakage current typ. Max. 1 mA) between lead terminals and case.		
Weight	6.3 g		

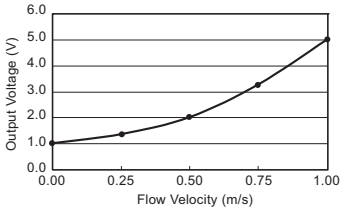
Note: 1. Flow range at 0°C, 101.3kPa.
2. Dry gas. (must not contain large particles, dust, oil, mist)
3. Reference (typical)

■ Absolute Maximum Rating

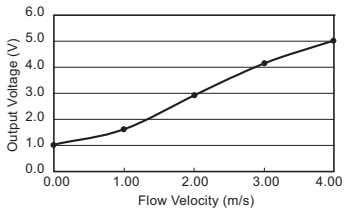
Item	Symbol	Rating	Unit
Power supply voltage	Vcc	26.4	VDC
Output voltage	Vout	6.0	VDC

■ Output Voltage Characteristics

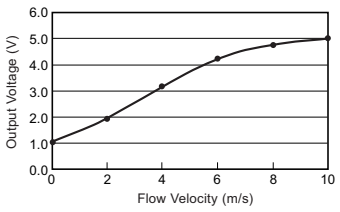
D6F-W01A1



D6F-W04A1



D6F-W10A1



D6F-W01A1

Flow Velocity (m/s)	0.00	0.25	0.50	0.75	1.00
Output Voltage (VDC)	1.00±0.2	1.35±0.2	2.01±0.2	3.27±0.2	5.00±0.2

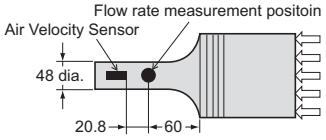
D6F-W04A1

Flow Velocity (m/s)	0	1	2	3	4
Output Voltage (VDC)	1.00±0.2	1.58±0.2	2.88±0.2	4.11±0.2	5.00±0.2

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

2. Measurement condition: Power supply voltage 12±0.1 VDC, ambient temperature 25±5°C. and dry air.

Fig. 1.



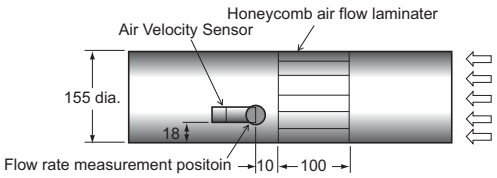
D6F-W10A1

Flow Velocity (m/s)	0	2	4	6	8	10
Output Voltage (VDC)	1.00±0.24	1.94±0.24	3.23±0.24	4.25±0.24	4.73±0.24	5.00±0.24

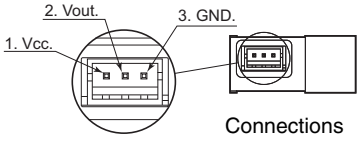
Note: 1. Air velocity. D6F-W is optimally adjusted for air velocity detection, derived from mass air-flow measurement according to our in-house test method using a wind tunnel ϕ 155 mm as shown in Fig. 2.

2. Measurement condition: Power supply voltage 12±0.1 VDC, ambient temperature 25±5 °C. and dry air.

Fig. 2.



Connections



Enlarged view

Connections

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

Connector S3B-ZR-SM2-TF

(Made by JST Mfg. Co.,Ltd.)

The connector linked to this product should use the following JST Mfg.Co.,Ltd. housing, contacts and electrical wire

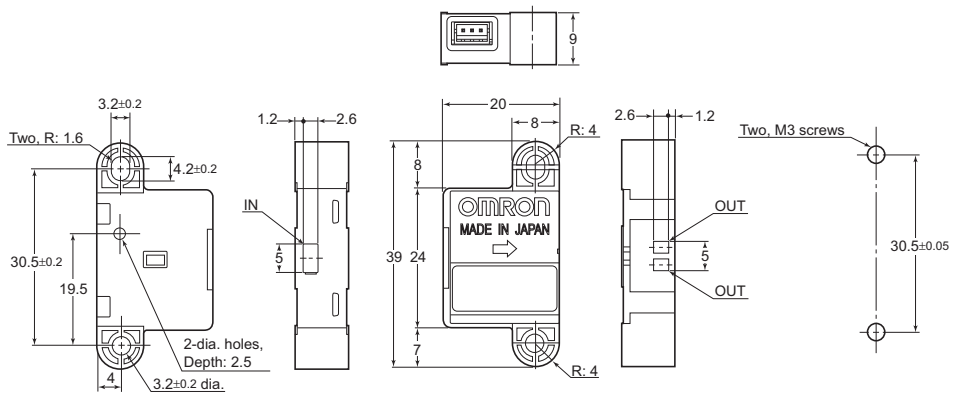
1) Contact: SZH-002T-P0.5
Wire: AWG#28 to #26
OR
2) Contact: SZH-003T-P0.5
Wire: AWG#32 to #28

Housing: ZHR-3

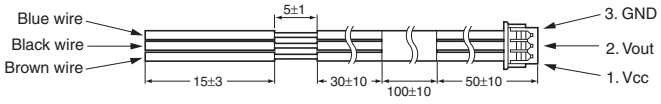
Dimensions

Note: All units are in millimeters unless otherwise indicated.

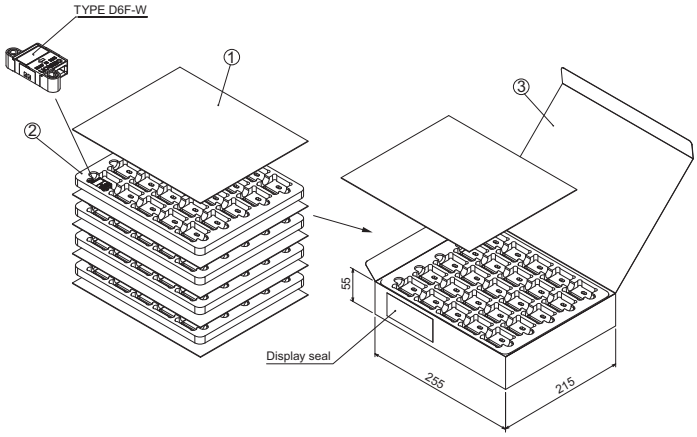
D6F-W01A1
D6F-W04A1
D6F-W10A1



D6F-W CABLE
(Sold separately)



Packaging

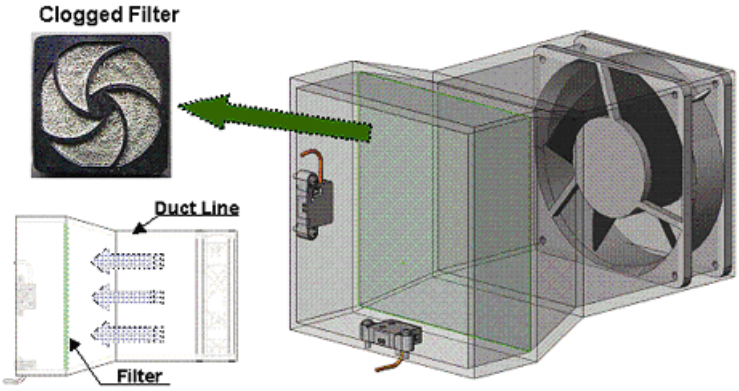


No.	Item	Material
1	Sock liner	CCNB
2	Tray (25pcs)	Polyethylene
3	Box (100 pcs)	CCNB

Application Example

Clogged Filter Detection

The D6F-W air flow sensor detects the decrease in air velocity through the filter as it becomes more contaminated with particles. The moment the velocity drops below a certain threshold, a warning signal is sent out, indicating the need for filter replacement.



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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