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		

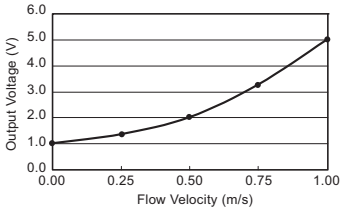
Note: 1. Flow range at 0°C, 101.3kPa.
2. Dry gas. (must not contain large particles, dust, oil, mist)
3. Reference (typical)

■ Absolute Maximum Rating

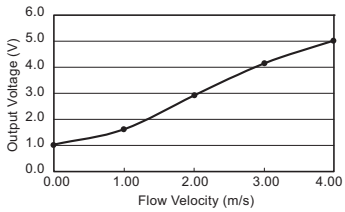
Item	Symbol	Rating	Unit
Power supply voltage	Vcc	26.4	VDC
Output voltage	Vout	6.0	VDC

■ Output Voltage Characteristics

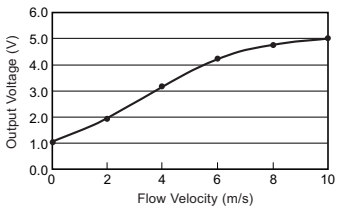
D6F-W01A1



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

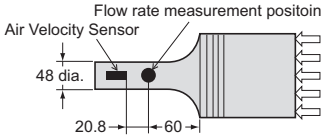
D6F-W04A1

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.



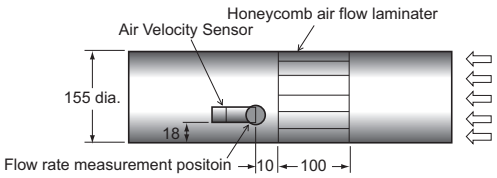
D6F-W10A1

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

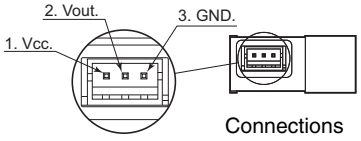
Note: 1. Air velocity. D6F-W is optimally adjusted for air velocity detection, derived from mass air-flow measurement according to our in-house test method using a wind tunnel ϕ 155 mm as shown in Fig. 2.

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

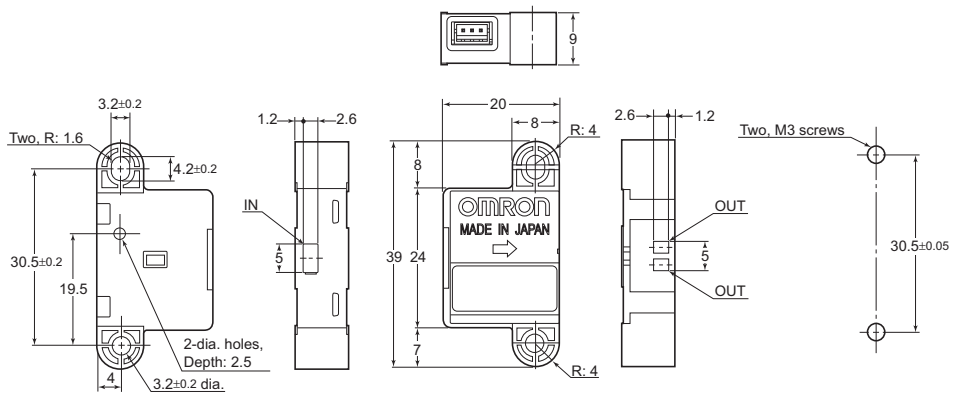
1) Contact: SZH-002T-P0.5
Wire: AWG#28 to #26
OR
2) Contact: SZH-003T-P0.5
Wire: AWG#32 to #28

Housing: ZHR-3

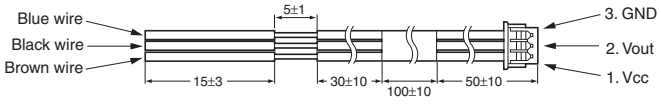
Dimensions

Note: All units are in millimeters unless otherwise indicated.

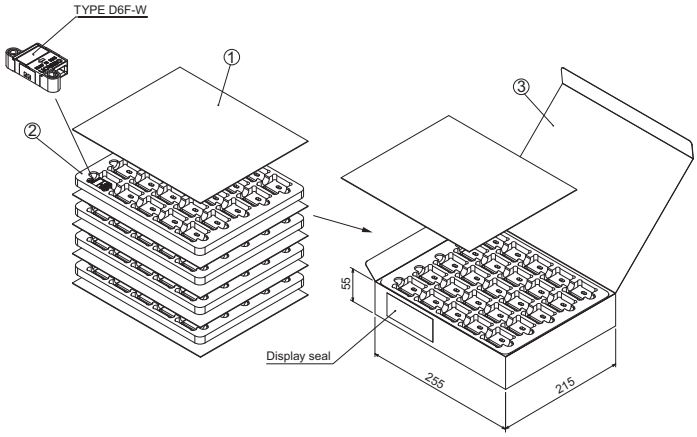
D6F-W01A1
D6F-W04A1
D6F-W10A1



D6F-W CABLE
(Sold separately)



Packaging

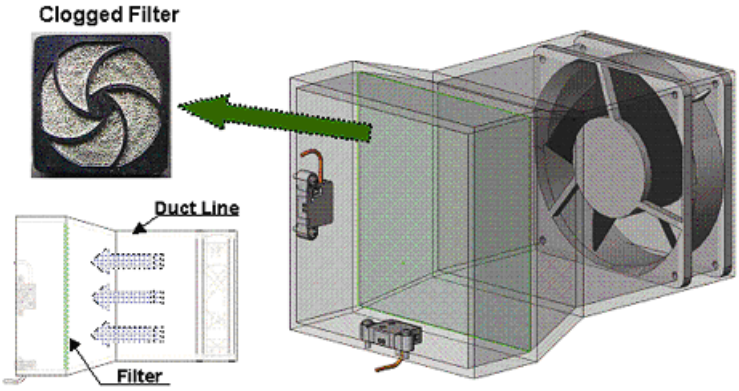


No.	Item	Material
1	Sock liner	CCNB
2	Tray (25pcs)	Polyethylene
3	Box (100 pcs)	CCNB

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.

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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