

Automation for a Changing World

Delta Gas Flow Meter DFM Series



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 **DELTA**
Smarter. Greener. Together.

Delta Gas Flow Meter DFM Series

Stable, accurate and fast

The brand-new gas flow meter DFM Series adopts Thermopile technology, enabling more accurate and faster measurement capability compared with traditional technology.

The DFM Series is equipped with a 3-layer embedded tranquilizer, and does not require extra space for straight pipe when installing.

With its compact design and easy setup, the DFM Series is ideal for installation in limited spaces. Its accurate and stable gas flow control and measurement capability is suitable for all environments and applications, such as forming machines and static eliminators.





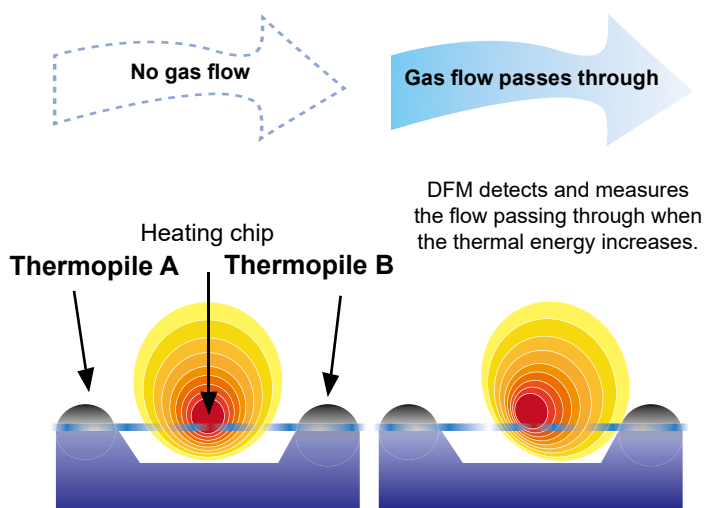
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Product Features

Highly precise gas flow measurement

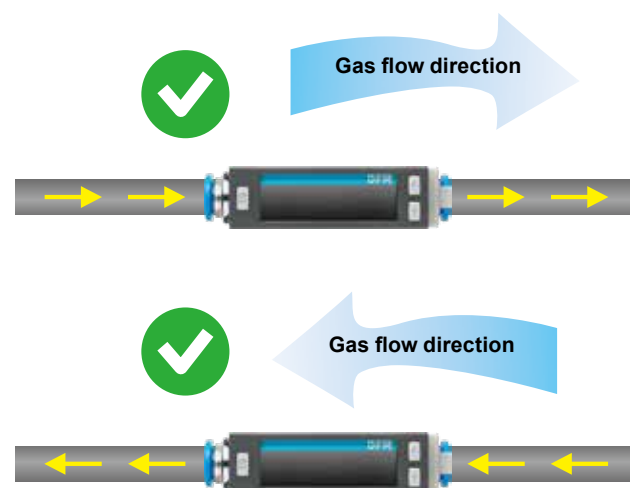
Adopts Thermopile technology with quick response time to conduct stable and accurate gas flow measurement.



Measurement Diagram

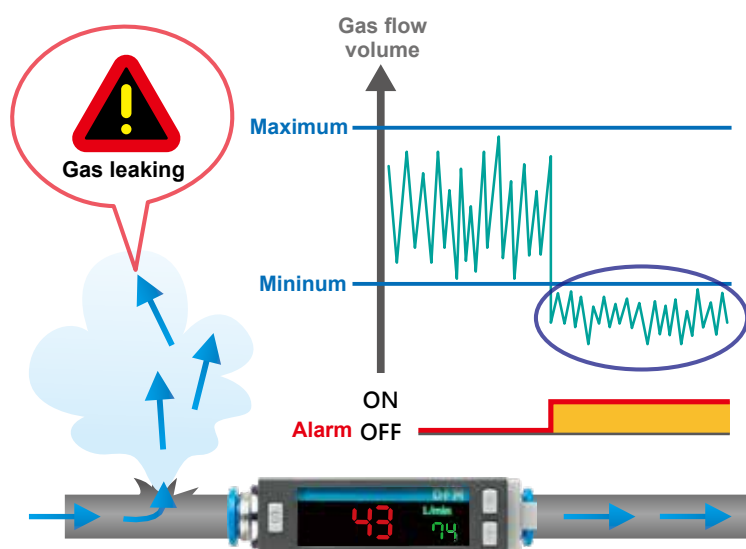
Two-sided gas flow measurement

No need to alternate installation for gas flow direction. Users can flexibly operate based on needs.



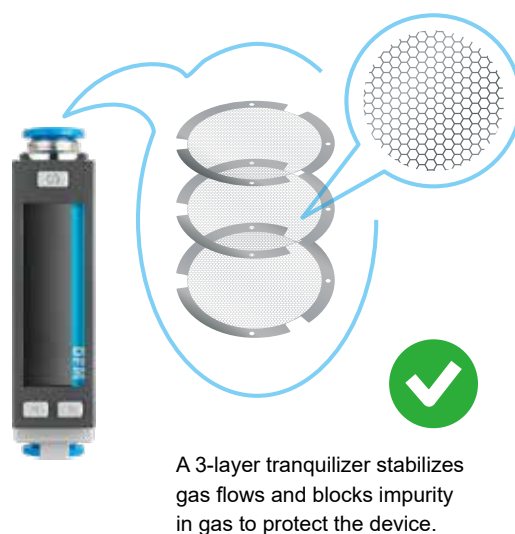
Flow limit setting for safe and reliable operation

Users can set up max. and min. limits of gas flow volume. The system will sound an alarm if the detection exceeds/fails the limits.



Embedded tranquilizer to stabilize gas flow

A 3-layer embedded tranquilizer eliminates gas flow chaos in bending pipe, providing stable and convenient gas flow detection.



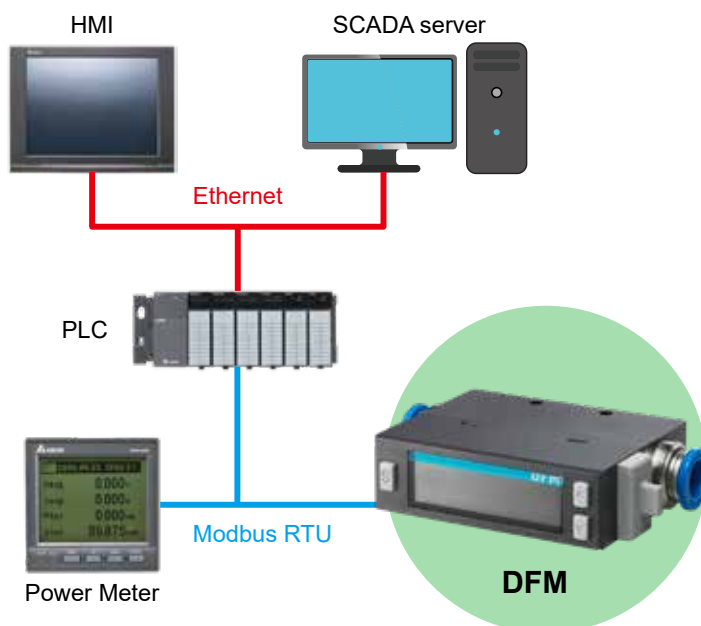
High quality LCD display

Clear characters display for easy device status monitoring in all kinds of environments.



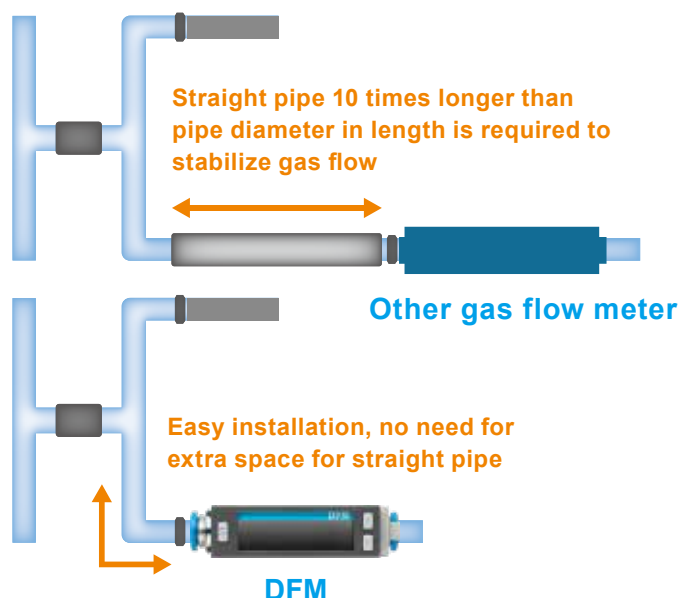
Supports analog and digital output

Fast connection to obtain real-time data; analog voltage, analog current and digital RS-485 outputs available on different models.



Built-in stabilizer

Connecting with the pipe directly according to the requirements of the installation environment; no need to install 10 times further than the pipe diameter, providing flexibility and space-saving advantages.



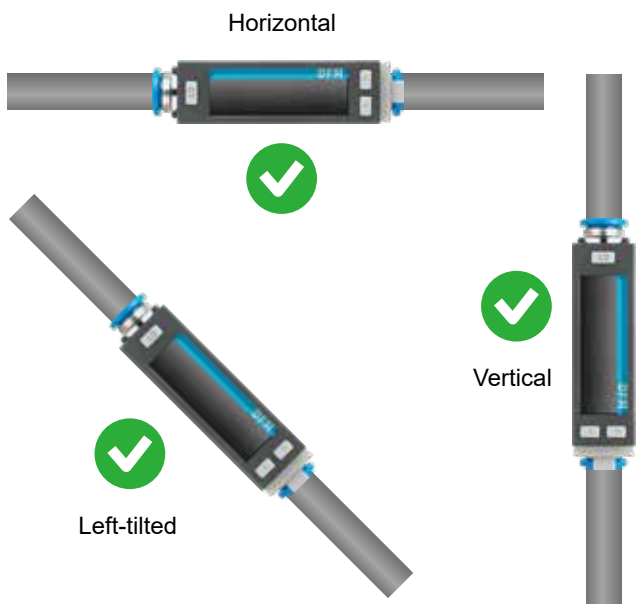
Optional bracket for easy installation

Optional bracket for easy installation with screws.

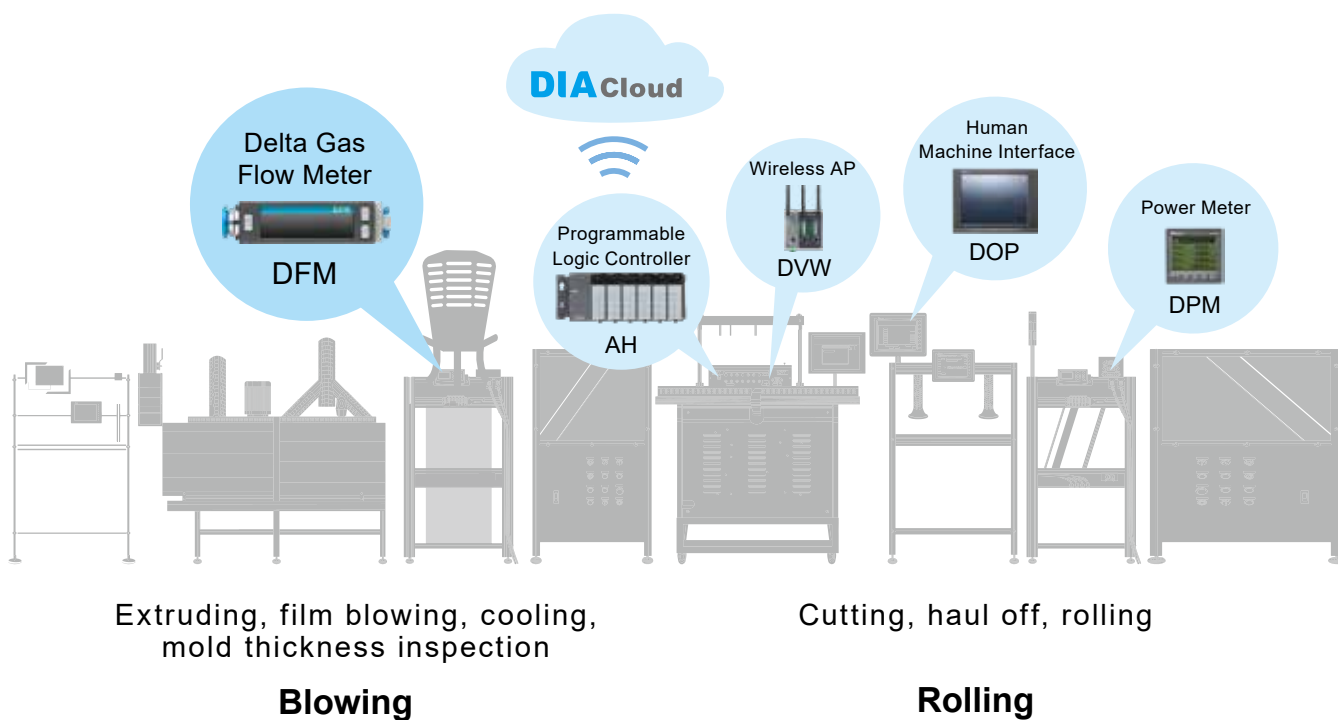


Flexible installation

Vertical, horizontal or tilted installation based on users' needs with a display that faces all directions, providing agile, flexible and easy applications.



System Structure



Applications

Cleaning, gas drying, environment monitoring, cable charging, ventilation inspection in automation equipment, semiconductor, panel and automobile industries.

- Cylinder gas flow usage measurement



- Gas filling flow control for food packaging



- Gas flow / pressure management on production lines



- Filling gas flow management



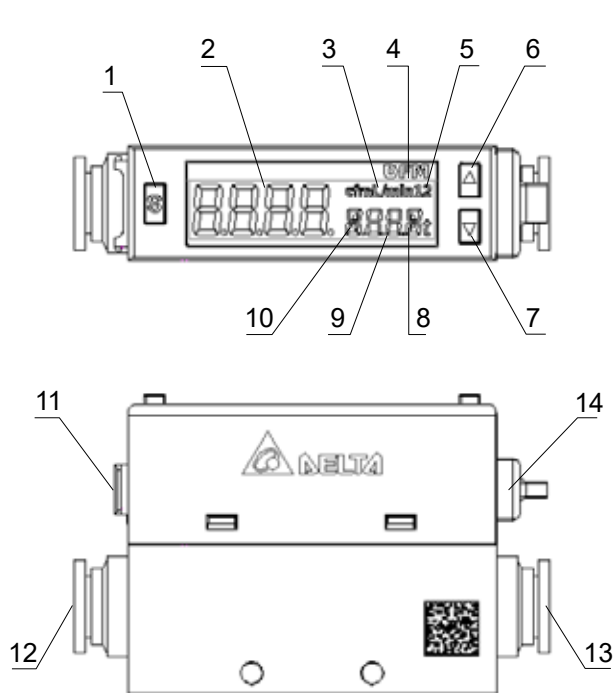
- Equipment gas flow consumption management



- Coating gas flow management



Product Profile

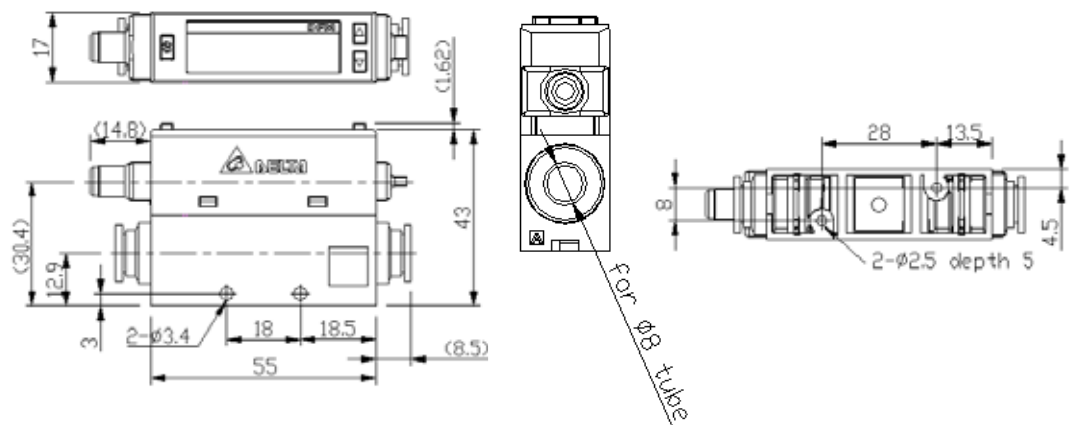


- 1 Function setting bottom
- 2 Main display (flow volume / parameters)
- 3 Gas flow unit
- 4 First digital on/off signal
- 5 Second digital on/off signal
- 6 Up
- 7 Down
- 8 Flow direction right
- 9 Secondary display (setting value / setting function)
- 10 Flow direction left
- 11 Power and I/O terminals
- 12 A side fast connection port
- 13 B side fast connection port
- 14 RS-485 output terminal protector (optional)

Dimensions

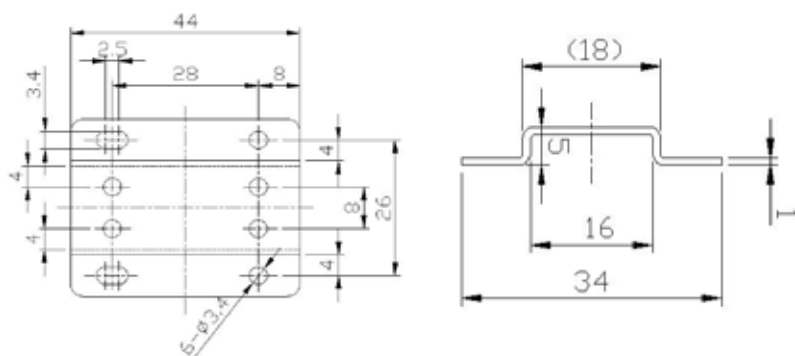
Gas flow meter

Unit: mm



Bracket (optional)

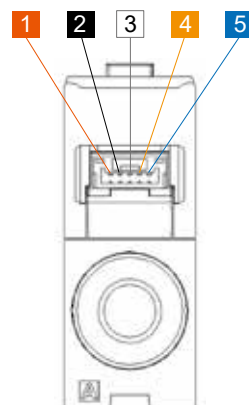
Unit: mm



Connection Terminals

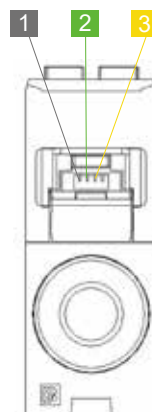
Power and I/O terminals (A side)

1. Positive power input
2. OUT1, first digital output signal
3. OUT2/IN, second digital I/O signal
4. Analog output signal
5. Negative power input



RS-485 output terminals (B side)

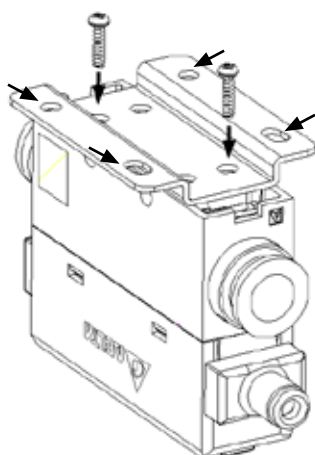
1. Anti-jamming grounding
2. RS-485 D+ terminal
3. RS-485 D- terminal



Installation

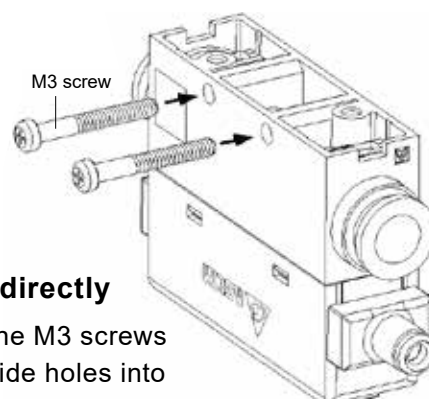
Screw with bracket

1. Use two screws to fix the bracket onto the DFM
2. Screw the bracket into position on the DFM to complete installation.









Screw directly

Screw the M3 screws by the side holes into position and complete installation.




Product Specifications

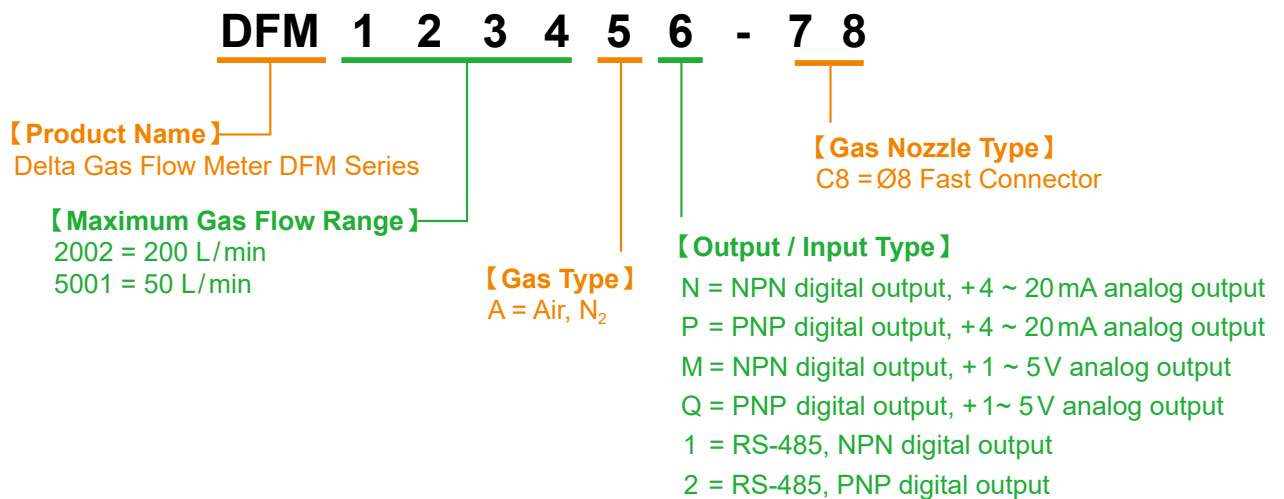
Delta Gas Flow Meter

Product	Description	Model Name	Output Type
	200L Voltage Output	DFM2002AM-C8	NPN
		DFM2002AQ-C8	PNP
	200L Current Output	DFM2002AN-C8	NPN
		DFM2002AP-C8	PNP
	200L RS-485 Output	DFM2002A1-C8	NPN
		DFM2002A2-C8	PNP
	50L Voltage Output	DFM5001AM-C8	NPN
		DFM5001AQ-C8	PNP
	50L Current Output	DFM5001AN-C8	NPN
		DFM5001AP-C8	PNP
	50L RS-485 Output	DFM5001A1-C8	NPN
		DFM5001A2-C8	PNP

Bracket (optional)

Product	Description	Model Name
	DFM bracket	DFM2002-BMKIT

Ordering Information



Technical Specifications

Model		DFM200 Series	DFM500 Series
Input Power	Voltage Range	24V _{DC} ± 10 % non-isolation	
	Power Consumption	24 V: - Voltage output and RS-485 models: max. 0.96 W - Current output model: max. 1.2 W	
Gas Flow Measurement	Measurement Range*2	2 ~ 200 L/min*1	0.5 ~ 50L/min*1
	Measurable Gas	Air, N ₂	
	Operation Pressure	0 ~ 0.75 MPa	
	Max. Durable Pressure	1 MPa	
	Pressure-related Inaccuracy	± 5 % F.S. (0 ~ 0.75 MPa) entire process The process is based on pressure 0.35 MPa. Pressure can also lead to inaccuracies other than measurement inaccuracy.*3	
	Measurement Accuracy	± 3 % F.S. entire process	
	Temperature-related Inaccuracy	± 5 % F.S. (0° C ~ 50° C) entire process The process is based on temperature 25° C. Temperature can also lead to inaccuracies other than measurement inaccuracy	
	Functions	Peak volume display/accumulated volume display/reverse display/zero adjustment/button lockup/energy-saving mode/percentage (analog output)/delay decision	
Display	Flow Volume Display	Max. 4 digits for peak volume, 8 digits for accumulated volume	
	Display Modes	2 colors (red and green) display available based on different modes	
	Display Figure	1L/min	0.1L/min
Output	Output Terminals	Built-in 2 NPN or PNP transistor digital outputs and 1 analog output (varies in different models)	
	Input Terminals	Built-in 1 digital output, shares terminal with 2 nd output	
	Output Form	NPN: max. durable pressure 30V/100mA, residual voltage 1.5V PNP: max. durable pressure 30V/100mA, residual voltage 1.5V	
	Output (Varies in Different Models)	Analog voltage: 1~5V, min. output load resistance 50 kΩ Linear inaccuracy < ± 3% entire process	
		Analog current: 4 ~ 20 mA, max. output load resistance 300 Ω Linear inaccuracy < ± 3% entire process	
		Digital RS-485	
Response Time	50 ms/100 ms/500 ms/1 secs/2 secs		
Gas Nozzle Size	C8	Fast connection port Ø8 (8 mm diameter pipe connectable)	
Cable Specifications	Connector	Standard 2 m cable included	
Operation Temperature	0 °C ~ 50 °C		
Storage Temperature	-10 °C ~ 60 °C		
Operation Humidity	35 % ~ 85 % RH (Non-condensed)		

*1 Dry and clean gas without dirt and oil

*2 Flow transfers into value below. Standard volume std (pre-setting): 20° C, AP 101.3 kPa

*3 Please ensure both sides are connected to pipe when operating. If one side is not connected, pressure will decrease and lead to inaccurate measurement



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