

## • Mass flow



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Product catalog

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MF4003 and MF4008

## Gas Mass Flow Meter

### Production description

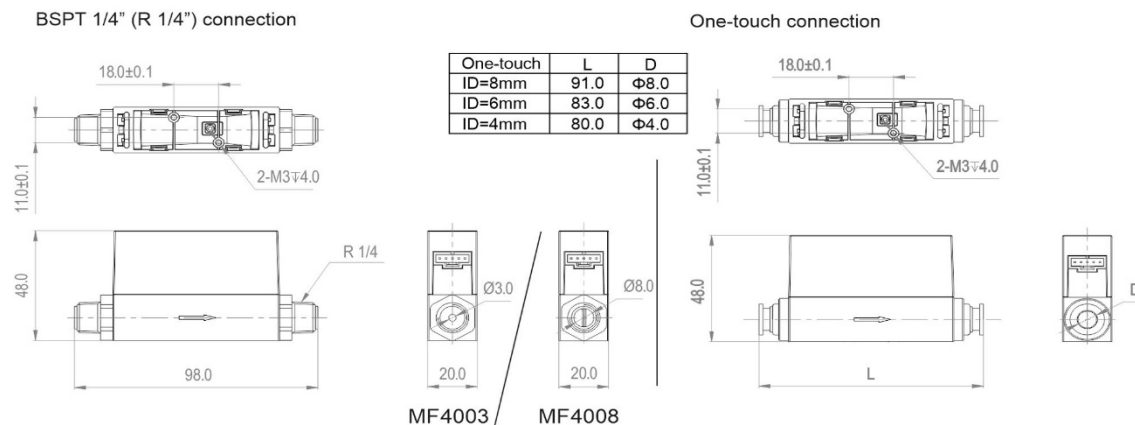
**MF4000 series mass flow meters** are designed for general purpose flow metering and control applications and are made with Siargo's proprietary MEMS mass flow sensors and smart electronic circuitry. The meters directly measure mass flow with a very low pressure loss. The current models have built an easy access menu keyboard that allows the user to program the meter for a variety of functions. Applications such as lab flow meter; equipment panel and many process control such as welding equipment, and oxygen pressurizer.

MF4000 can measure a flow up to 50 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Built-in keyboard for easy programming
- Fast response time
- Low pressure loss
- Fully customizable connectors

### Mechanical dimensions

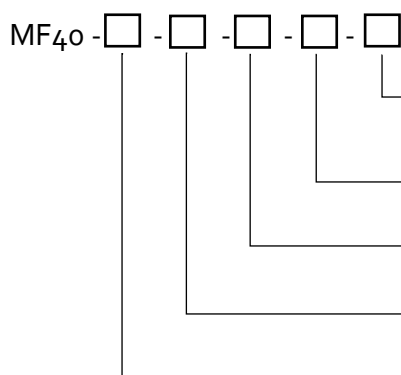


## Specifications

Flow range	0~2...5 (MF4003) / 0~10...50 (MF4008)	SLPM
Accuracy	$\pm(1.5+0.2FS)$	%
Repeatability	0.25	%
Response time	10 (default, others: 20...1000)	msec
Power supply	8~24 (50mA)	Vdc
Output	Linear: 0.5~4.5 Vdc / Digital: RS485 / RS232	
Pressure loss (max.)	0.1 @5 SLPM (4003) / 0.6 @50 SLPM (4008)	kPa
Pressure rating	0.5	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	BSPT 1/4" or One-touch 4 / 6 / 8mm	
Pin-out	5 pins, AMPMODU MTE, or compatible	
Calibration	Air @ 20°C, 101.325 kPa	
Max. flow change	4.0 (4003) / 30 (4008)	SLPM/sec
Max. overflow	30 (4003) / 200 (4008)	SLPM
Weight	50.0 (with BSPT)	g
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection



Gas: A – air; B – N<sub>2</sub>O; C – CO<sub>2</sub>; N – N<sub>2</sub>; O – O<sub>2</sub>; R – Ar.  
For other gases, please contact the manufacturer.

Output: B – RS485; C – RS232; V – analog.

Connector: R – BSPT 1/4"; OX – one touch; X – customized.

Full scale flow rate: 2...5 (4003); 10...50 (4008).

DN: 03 – 4003; 08 – 4008.

**Note:** For CO<sub>2</sub> and N<sub>2</sub>O, the full-scale flow rate is 80% of air.



MF4600

## Gas Mass Flow Meter

### Production description

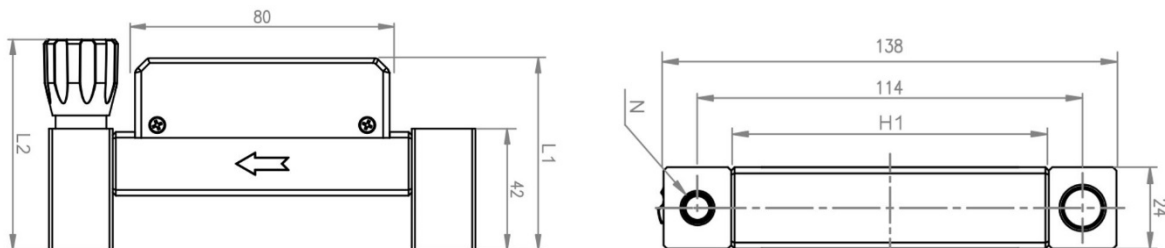
**MF4600 series mass flow meters** are designed for general purpose flow metering and control applications and are made with Siargo's proprietary MEMS mass flow sensors and smart electronic circuitry. The meters directly measure mass flow with a very low pressure loss. The current models are dimensioned and built with a precision manual control valve that allows the seamless replacement of mechanical process control rotameters.

MF4000 can measure a flow up to 50 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Built-in keyboard and manual control valve
- Fast response time
- Low pressure loss
- Fully customizable connectors

### Mechanical dimensions



	L1	L2	H1	N
MF4601	60	66	94	2-NPT or 2-BSPT or customized
MF4603	60	66	94	
MF4608	64	70	90	

## Specifications

Flow range	0~0.1...0.5 (4601) / 0~1...50(4603)/0~10...50 (4608)	SLPM
Accuracy	±(2.5+0.5FS)	%
Repeatability	0.5	%
Response time	10 (default, others: 20...1000)	msec
Power supply	8~24 (50mA)	Vdc
Output	Linear: 0.5~4.5 Vdc / Digital: RS485 / RS232	
Display	4 digits, 2 status LED	
Resolution	0.001 / 0.01 / 0.1 / 1.0	SLPM
Pressure rating	0.5	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	NPT-F or BSPT-F	
Pin-out	5 pins, AMPMODU MTE, or compatible	
Calibration	Air @ 20°C, 101.325 kPa	
Max. flow change	4.0 (4003) / 30 (4008)	SLPM/sec
Max. overflow	30 (4003) / 200 (4008)	SLPM
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection

MF46 - ☐ - ☐ - ☐ - ☐ - ☐

Gas: A – air; C – CO<sub>2</sub>; N – N<sub>2</sub>; O – O<sub>2</sub>; R – Ar.  
For other gases, please contact the manufacturer.

Output: B – RS485; C – RS232; V – analog.

Full scale flow rate: 100...500 (01); 2...5 (03); 10...50 (08).

Connector: R – BSPT; N – NPT; X – customized.

DN: 01 – 4001; 03 – 4003; 08 – 4008.



MF5100V

## Gas Mass Flow Meter

### Production description

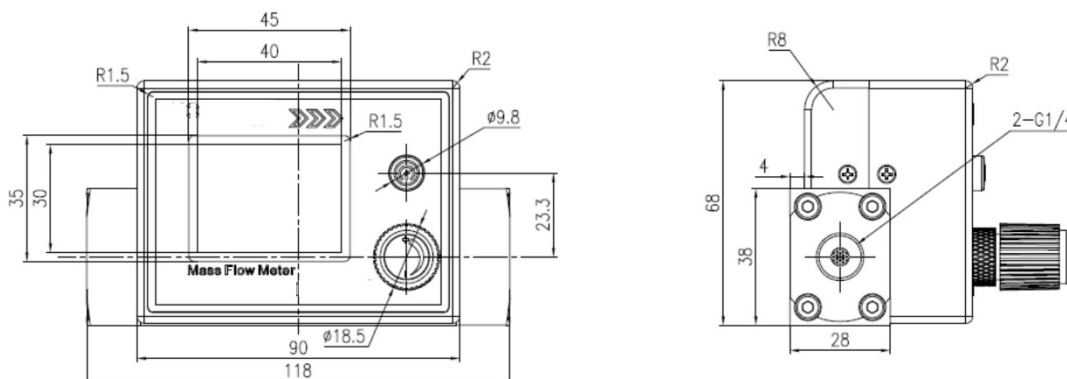
**MF5100V series mass flow meters** are designed for flow metering and control with mobile power applications and are made with Siargo's proprietary MEMS low power mass flow sensors and smart electronic circuitry. The meters directly meter and control the mass flow with a very precise manual control valve. The current models can be readily applied to regulate such as gas cylinder delivery for medical purposes on an ambulance or other cases where direct power is not available. Other applications include laboratory and pharmaceutical process control.

MF5100V can measure a flow up to 50 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter with power management
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Mobile applications with long operation
- Fast response time
- Precise step or continuous control
- Customer programmable alarm and other functions

### Mechanical dimensions

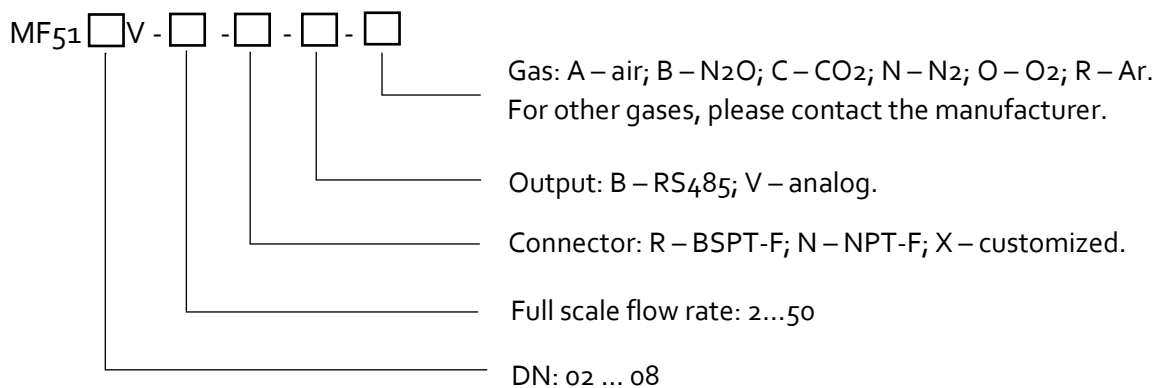


## Specifications

Flow range	0~2...50	SLPM
Accuracy	$\pm(1.5+0.2FS)$	%
Repeatability	0.25	%
Response time	200	msec
Power supply	Lithium ion C-Cell / 8~24 Vdc	
Battery life	>2 (normal usage)	Year
Output	LCD 6 digital / RS485 Modbus	
Pressure sensitivity	Null	
Pressure rating	0.8	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	BSPT / NPT	
Pin-out	5 pins, M8	
Calibration	Air @ 20°C, 101.325 kPa	
Valve	NS1.5 (29.8), SS	
Protection	IP50	
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection



**Note:** For CO<sub>2</sub> and N<sub>2</sub>O, the full-scale flow rate is 80% of air.



MF5000

## Gas Mass Flow Meter

### Production description

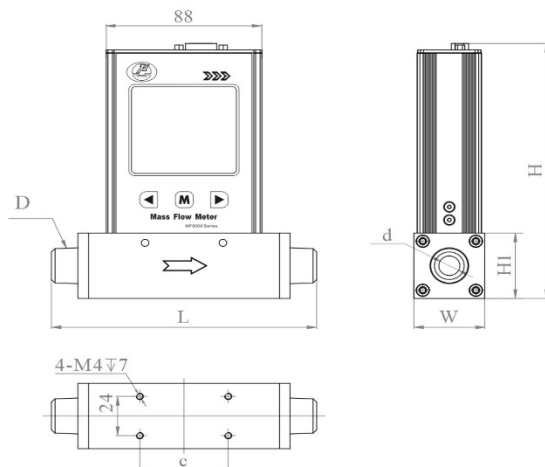
**MF5000 series mass flow meters** are designed for general purpose flow metering and control applications and are made with Siargo's proprietary MEMS mass flow sensing technology and smart electronic circuitry. The meters directly measure mass flow with a very low pressure loss. It has a wide spectrum of selections in pipe diameter, range, gas type, etc. The current models can be readily applied to industrial gas process and control, gas; and other applications in laboratory and test benches

MF5000 can measure a flow from 0.15 up to 800 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Fast response time
- Low pressure loss
- Fully customizable connectors

### Mechanical dimensions



Model	DN	D	L	H	H <sub>1</sub>	W	d	C
5003	3.0	1/8"	118	144	28	38	Φ3	36
5006	6.0	1/4"	124	144	28	38	Φ6	36
5008	8.0	3/8"	124	151	35	38	Φ8	50
5012	12.0	1/2"	150	156	40	40	Φ12	50
5019	19.0	3/4"	182	156	40	40	Φ19	70

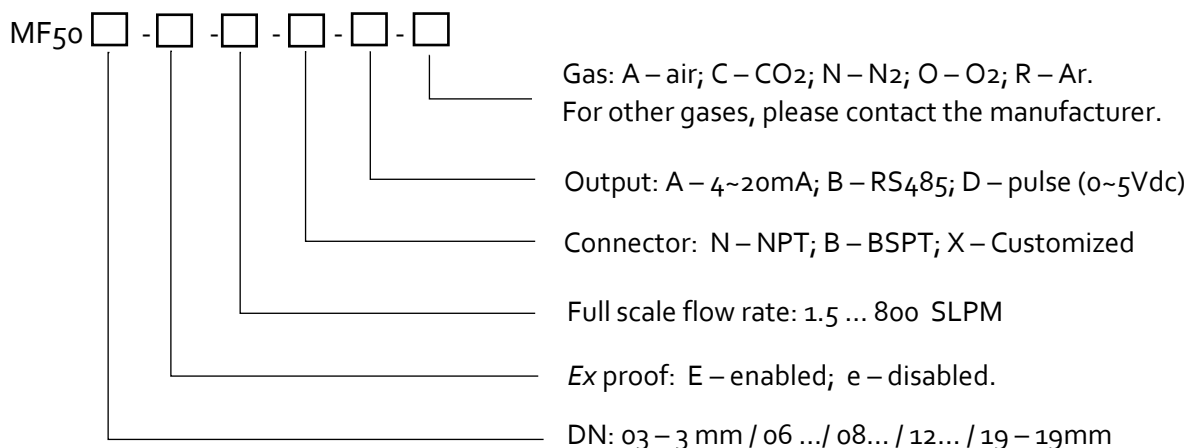


## Specifications

Flow range	0~1.5(03) / 50(06) / 120(08) / 300(12) / 800(19)	SLPM
Accuracy	$\pm(1.5+0.5FS)$	%
Repeatability	0.5	%
Power supply	8~24 (50mA)	Vdc
Output	RS485 / 4~20mA / pulse 0~5Vdc	
Pressure rating	1.5	MPa
Temperature	-20 ~ 60	°C
Humidity	<95 (no condensation)	%RH
Pin-out	DB9	
Calibration	Air @ 20°C, 101.325 kPa	
Hazardous rating	Ex ia II C T <sub>4</sub>	

**Note:** Parameters specified at the calibration conditions.

## Product selection



- Note:**
1. For CO<sub>2</sub> and N<sub>2</sub>O, the full-scale flow rate is 80% of air.
  2. For explosion-proof models, the LCD / display is not offered.
  3. The default flow range is 100:1 – or the minimal flow rate is 0.01 times the full scale.



MF5100

## Gas Mass Flow Meter

### Production description

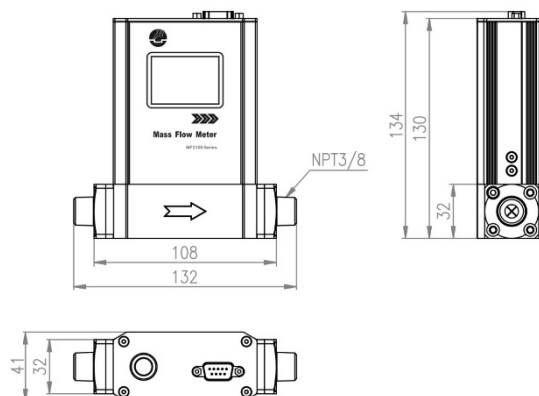
**MF5100 series mass flow meters** are designed for a large dynamic range (200:1) and high accuracy of 1.5% of reading in flow metering and control applications. With Siargo's proprietary MEMS mass flow sensing technology, the meter can automatically recognize the registered gases and be powered with a lithium-ion battery for long-lasting operation. The current models can be readily applied to applications with multiple gas process control and flow efficiency calibration, as well as applications requiring mobile power.

MF5100 can measure a flow up to 100 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter
- Excellent rangeability 200:1 with integrated multiple sensing elements
- High accuracy of 1.5% reading
- Fast response time
- Battery-powered with the long-lasting operation
- Fully customizable connectors

### Mechanical dimensions



**Note:** The current three models have the identical mechanical dimensions.

## Specifications

Flow range	0~30 (5106) / 0~50 (5108) / 0...100 (5110)	SLPM
Initial flow rate	0.01 / 0.01 / 0.02	SLPM
Accuracy	±1.5	%
Repeatability	0.25	%
Response time	250	msec
Long term stability	< 1.0	%/year
Power supply	D-Cell 19Ah lithium ion / 8~24 Vdc (external)	
Battery life	> 2	Year
Output*	LCD / Digital: RS485 / Pulse	
Pressure rating	1.0	MPa
Burst pressure	1.5	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	BSPT 1/4" or One-touch 4 / 6 / 8mm	
Pin-out	DB9	
Mechanical connection	NPT – M 3/8"	
Calibration	Air @ 20°C, 101.325 kPa	
Weight	< 1.0	kg
Storage temperature	-20 ~ 70	°C

- Note:**
- Parameters specified at the calibration conditions.
  - RS485 Modbus / pulse output requires an external power model. 4~20mA and voltage output are optional.



MF5600

## Gas Mass Flow Sensor

### Production description

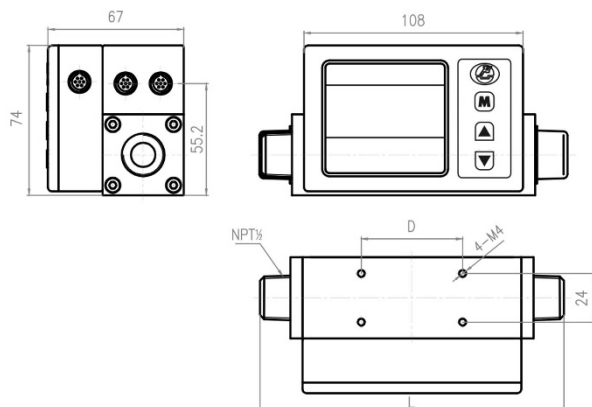
**MF5600 series mass flow meters** are designed for general purpose flow metering and control applications where a detachable meter head is required for some distance data reading. The meters directly measure mass flow with a very low pressure loss. The current models can be readily applied to hospital oxygen delivery management, and industrial process monitor and gauge; and other applications such as welding gas equipment, and food and beverage process.

MF5600 can measure a flow up to 800 SLPM. The connectors can be fully customized.

### Features

- MEMS thermal mass flow meter
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Detachable meter head for distance data reading
- Fast response time
- Low pressure loss
- Fully customizable connectors

### Mechanical dimensions



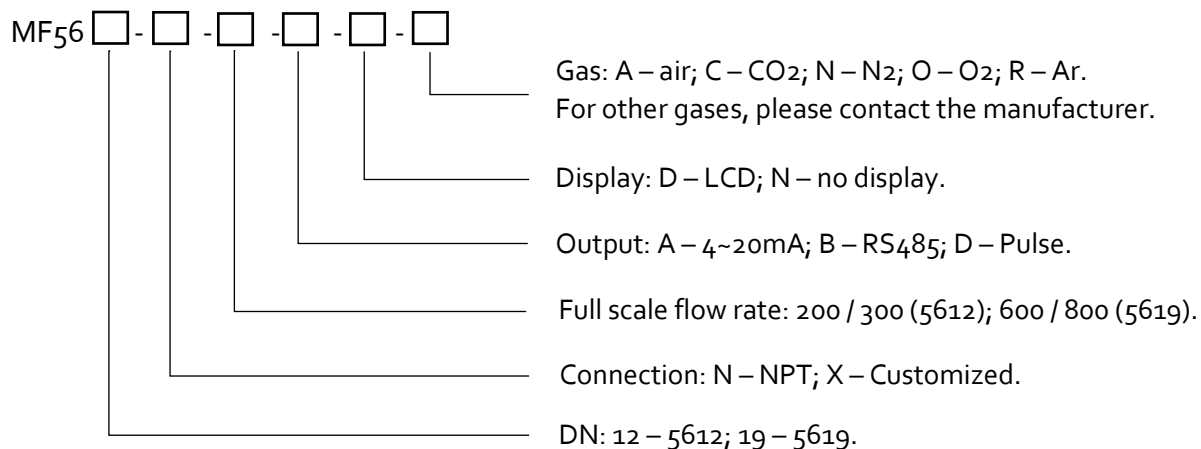
	D	L	N
5612	50.0	150.0	1/2"
5619	70.0	182.5	3/4"

## Specifications

Flow range	0~200...300 (5612) / 0~600...800 (5619)	SLPM
Initial flow rate	0.3 / 0.8	SLPM
Accuracy	±(1.5+0.5FS)	%
Repeatability	0.5	%
Power supply	12~24 (50mA)	Vdc
Output	RS485 / 4~20mA / Pulse	
Pressure rating	1.0	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	NPT-F ½" / NPT-F ¾"	
Cable	LCD cable / data cable	
Calibration	Air @ 20°C, 101.325 kPa	
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection



**Note:** 1. For CO<sub>2</sub> and N<sub>2</sub>O, the full-scale flow rate is 80% of air.

2. Cable order code: **IC7 -150** – data cable; **IC7-30-IC7 / IC7 -200-IC7** – detachable display cable.  
Numerical is the length of the cable in cm.



MF5700

## Gas Mass Flow Meter

### Production description

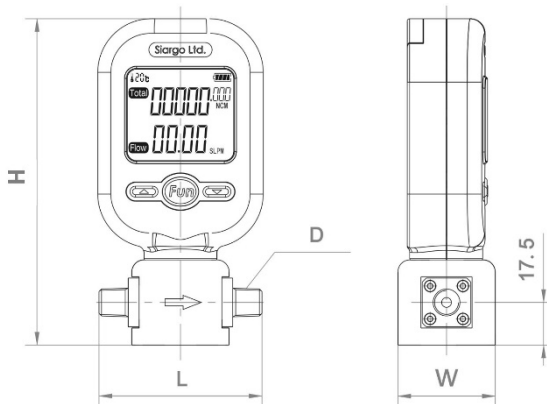
**MF5700 series mass flow meters** are designed for general purpose flow metering and control applications enabled by IoT or wireless data while having the mobile power option. With Siargo's proprietary MEMS mass flow sensing technology and smart electronic circuitry, the products offer unprecedented cost-effectiveness with performance. The sensors directly measure mass flow with a very low pressure loss, opt with various wireless transmissions, and control ON/OFF valve. The current models can be readily applied to many process applications.

MF5700 can measure a flow up to 200 SLPM. The mechanical connectors can be fully customized.

### Features

- MEMS thermal mass flow meter enabled with IoT
- Excellent rangeability 80:1 with integrated multiple sensing elements
- Control ON/OFF valve
- User programmable functions
- Mobile power option by 4-AA batteries
- Fully customizable mechanical connectors

### Mechanical dimensions



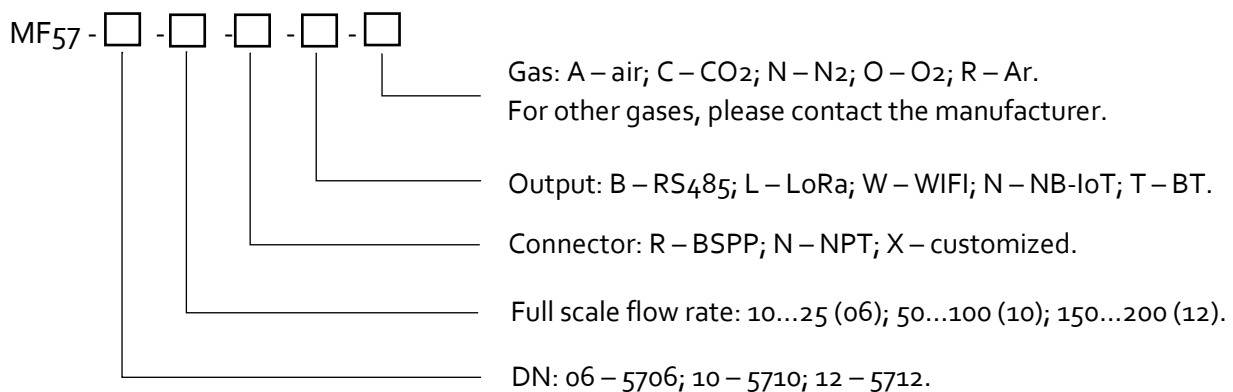
	L	W	H	D
<b>5706</b>	61	34	127	1/2"
<b>5710</b>	81	45	134	3/8"
<b>5712</b>	90	45	141	1/2"

## Specifications

Flow range	0~10...25 (06) / 0~50...100 (08) / 0~150...200 (12)	SLPM
Accuracy	$\pm(2.0+0.25FS)$	%
Repeatability	0.5	%
Response time	< 2.0 on battery	sec
Power supply	4-AA (LR) / 6~15 Vdc with AC adapter	
Output	RS485 Modbus	
Wireless	LoRa / WIFI / NB-IoT / BT LE	
Pressure rating	0.5	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	BSPP	
Data interface	USB Type-C	
User program	Front face, 3 keys, or via Modbus	
Calibration	Air @ 20°C, 101.325 kPa	
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection



- Note:**
1. For CO<sub>2</sub> and N<sub>2</sub>O, the full-scale flow rate is 80% of air.
  2. Only one of the wireless options can be selected for each model.



MF5709

## Gas Mass Flow Meter

### Production description

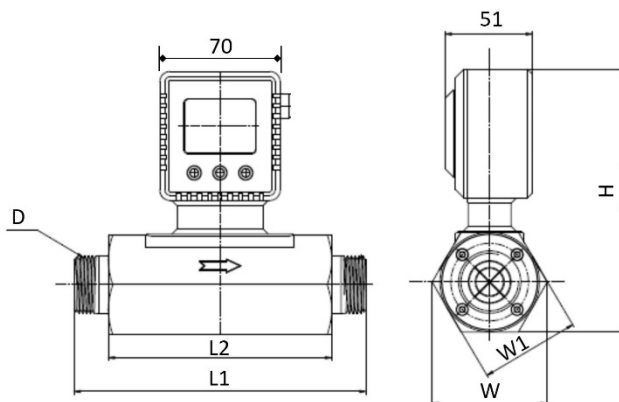
**MF5709 series mass flow meters** are designed for general purpose flow metering and control applications and are made with Siargo's proprietary MEMS thermal time-of-flight sensing technology and smart electronic circuitry. The meters will measure mass flow while having very high sensitivity at low flow, meter selective gases without requiring the gas transfer data. The current models allow the user to program various functions and can be readily applied to low flow natural gas and process metering, and other process control applications.

MF5709 can measure a flow up to 5000 SLPM with a 2" pipe. The connectors can be customized.

### Features

- MEMS thermal time-of-flight sensing technology
- Excellent rangeability 100:1 with integrated multiple sensing elements
- Multi-gas capability
- Fast response time
- User programmable functions
- Fully customizable connectors

### Mechanical dimensions



	L <sub>1</sub>	L <sub>2</sub>	W <sub>1</sub>	W <sub>2</sub>	H
<b>5709-1</b>	130	170	67	58	153
<b>5709-2</b>	150	200	76	68	165

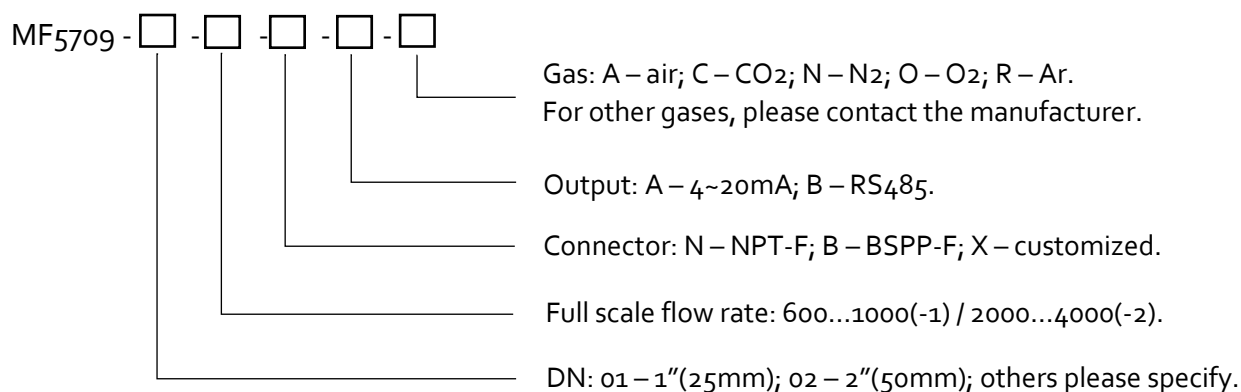


## Specifications

Flow range	0~600...1000 (5709-1) / 0~2000...4000 (5709-2)	SLPM
Accuracy	$\pm(1.5+0.25FS)$	%
Repeatability	0.5	%
Response time	200	msec
Power supply	8~24 (50mA)	Vdc
Output	RS485 Modbus / 4~20mA	
Pressure loss (max.)	<1.6 @ 1000 SLPM (5709-1)	kPa
Pressure rating	0.8	MPa
Temperature	-10 ~ 55	°C
Humidity	<95 (no condensation)	%RH
Mechanical connection	NPT-F	
Pin-out	M12	
Protection	IP66 (NEMA 4x)	
Calibration	Air @ 20°C, 101.325 kPa	
Storage temperature	-20 ~ 70	°C

**Note:** Parameters specified at the calibration conditions.

## Product selection



**Note:** For CO<sub>2</sub>, the full-scale flow rate is 80% of air.



## Order and Sales Contact

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