Selection guide

SUS model

Example: CMS9500BSRN200000

Selection				Description
Basic model No.	CMS	↓	↓	Gas Mass Flowmeter
Flow rate range	9500	○	○	Air flow rate range 0 to 500mL/min (standard) [Notes 1, 3]
	0002	○	○	Air flow rate range 0 to 2L/min (standard) [Notes 1, 3]
	0005	○	○	Air flow rate range 0 to 5L/min (standard) [Notes 1, 3]
	0020	○	○	Air flow rate range 0 to 20L/min (standard) [Notes 1, 3]
	0050	○	○	Air flow rate range 0 to 50L/min (standard) [Notes 1, 3]
	0200	○	○	Air flow rate range 0 to 200L/min (standard) [Notes 1, 3]
	0500	○	○	Air flow rate range 0 to 500L/min (standard) [Notes 1, 3]
Display	B	○	○	Includes display. Flow direction: left → right
	R	○	○	Includes display. Flow direction: right → left
Material	S	○	○	SUS303 and SUS316
Connection	R	○	○	Rc 1/2" (CMS0200/0500) Rc 1/4" (CMS9500/0002/0005/0020/0050)
Gas type	N	○	–	Air/nitrogen (changeable to standard gases [Note 3])
	S	–	○	Oxygen [Note 2]
Output	2	○	○	4-20mAdc / 0-5Vdc / 1-5Vdc selectable
Option (1)	0	○	○	(None)
Option (2)	0	○	○	(None)
Option (3)	0	○	–	(None)
	1	○	○	Gas-contacting parts treated to be oil-inhibited
Option (4)	0	○	○	(None)
	D	○	○	Inspection results provided
	Y	○	○	Traceability certificate provided
Design code	0	○	○	Product version

SUS316 model

Example: CMS9500BTTN200000

Selection				Description
Basic model No.	CMS	↓	↓	Gas Mass Flowmeter
Flow rate range	9500	○	○	Air flow rate range 0 to 500mL/min (standard) [Notes 1,3]
	0002	○	○	Air flow rate range 0 to 2L/min (standard) [Notes 1, 3]
	0005	○	○	Air flow rate range 0 to 5L/min (standard) [Notes 1, 3]
	0020	○	○	Air flow rate range 0 to 20L/min (standard) [Notes 1, 3]
	0050	○	○	Air flow rate range 0 to 50L/min (standard) [Notes 1, 3]
	0200	○	○	Air flow rate range 0 to 200L/min (standard) [Notes 1, 3]
	0500	○	○	Air flow rate range 0 to 500L/min (standard) [Notes 1, 3]
Display	B	○	○	Includes display. Flow direction: left → right
	R	○	○	Includes display. Flow direction: right → left
Material	T	○	○	SUS316
Connection	U	○	○	UNF connection: 9/16-18 UNF (CMS9500/0002/ 0005/0020/0050), 3/4-16 UNF (CMS0200/0500)
	T	○	○	Rc 1/4" (CMS9500/0002/0005/0020/0050), Rc 1/2" (CMS0200/0500)
	S	○	○	1/4" Swagelok (CMS9500/0002/ 0005/0020/0050), 1/2" Swagelok (CMS0200/0500)
	V	○	○	1/4" VCR (CMS9500/0002/0005/ 0020/0050), 3/8" VCR or equiv., (CMS0200/ 0500)
Gas type	N	○	–	Air/nitrogen (changeable to standard gases [Note 3])
	S	–	○	Oxygen [Note 2]
	E	○	○	Semi-standards gas: acetylene (C_2H_2), ammonia (NH_3) [Note 2]
Output	2	○	○	4-20mAdc / 0-5Vdc / 1-5Vdc selectable
Option (1)	0	○	○	(None)
	1	○	○	RS-485 communications
Option (2)	0	○	○	(None)
Option (3)	0	○	–	(None)
	1	○	○	Gas-contacting parts treated to be oil-inhibited
Option (4)	0	○	○	(None)
	D	○	○	Inspection results provided
	Y	○	○	Traceability certificate provided
Design code	0	○	○	Product version

Hydrogen/helium gas model (SUS316)

Example: CMS0010BTTH200100

Selection			Description
Basic model No.	CMS	↓	Gas Mass Flowmeter
Flow rate range	0010	○	Air flow rate range 0 to 10L/min (standard) [Note 1]
	0050	○	Air flow rate range 0 to 50L/min (standard) [Note 1]
	0200	○	Air flow rate range 0 to 200L/min (standard) [Note 1]
	0500	○	Air flow rate range 0 to 500L/min (standard) [Note 1]
	1000	○	Air flow rate range 0 to 1000L/min (standard) [Note 1]
	2000	○	Air flow rate range 0 to 2000L/min (standard) [Note 1]
Display	B	○	Includes display. Flow direction: left → right
	R	○	Includes display. Flow direction: right → left
Material	T	○	SUS316
Connection	U	○	UNF connection: 9/16-18 UNF (CMS0010/0050/0200), 3/4-16 UNF (CMS0500/1000/2000)
	T	○	Rc connection: Rc 1/4" (CMS0010/0050/0200), Rc 1/2" (CMS0500/1000/2000)
	S	○	Swl connection: 1/4" Swagelok (CMS0010/0050/0200), 1/2" Swagelok (CMS0500/1000/2000)
	V	○	VCR connection: 1/4" VCR (CMS0010/0050/0200), 3/8" VCR or equiv. (CMS0500/1000/2000)
Gas type	H	○	Hydrogen, helium [Note 5]
Output	2	○	4-20mAdc / 0-5Vdc / 1-5Vdc selectable
Option (1)	0	○	(None)
	1	○	RS-485 communications
Option (2)	0	○	(None)
Option (3)	1	○	Gas-contacting parts treated to be oil-inhibited
Option (4)	0	○	(None)
	D	○	Inspection results provided
	Y	○	Traceability certificate provided
Design code	0	○	Product version

• A circle (o) denotes availability.

Notes
1. "Standard" refers to the flow rate after conversion to 20℃, 101.325kPa (1 atmosphere).
2. When oxygen (gas type: S) or Semi-standards gas (gas type: E) are selected, make sure to specify "1: Gas-contacting parts tr eated to be oil-inhibited" for option (3). Note that resin and hydrogen models cannot be used for oxygen.
3. Gas type is set to air/nitrogen at the factory. The user can change to any of the gas types listed below using the control panel keys. A change in gas type can result in a change in flow rate range. Consequently, when selecting a gas type, make sure to check the maximum measurable flow rate for the gas type in the specifications of the re levant model. Compatible gas types: air/nitrogen, argon, carbon dioxide, city gas 13A (produced from LNG, 88% methane, calorific value of 45MJ or 46MJ), methane (100%), propane (100%), butane (100%). For other gas types, contact Yamatake Corporation.
4. Compatible gas types for resin and aluminum models are air/nitrogen, argon and carbon dioxide only. The user can change to any of these gas types using the control panel keys. A change in gas type can result in a change in flow rate range. Consequently, when selecting a gas type, make sure to check the maximum measurable flow rate for the gas type in the specifications of the relevant model.
5. Gas type is set to hydrogen at the factory. Change to helium with the gas type selection function. The maximum measurable flow rate is the same for hydrogen and helium.

Optional parts (sold separately)

◆ **A dedicated harness is required for each CMS flowmeter. Please order the harness when ordering the CMS.**

Name	Applicable models	Harness length	Part No.
Harness with special connector	• Without RS-485 communications	2m	81446594-005
		5m	81446594-006
	• With RS-485 communications	2m	81446594-007
		5m	81446594-008
Mounting bracket	• SUS/SUS316 models (CMS9500/0002/0005/0020/0050) • Hydrogen/helium gas models (CMS0010/0050/0200)	–	81446628-001
	• SUS/SUS316 models (CMS0200) • Hydrogen/helium gas models (CMS0500/1000)	–	81446721-001
	• SUS/SUS316 models (CMS0500) • Hydrogen/helium gas models (CMS2000)	–	81446856-001

Please read "Terms and Conditions" from the following URL before ordering and use.
https://www.azbil.com/products/factory/order.html

Azbil Corporation
Advanced Automation Company

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Kanagawa 251-8522 Japan

URL: https://www.azbil.com

1st Edition: Mar. 2003-MO
9th Edition: Jun. 2020-AZ

azbil

μF

Gas Mass Flowmeter

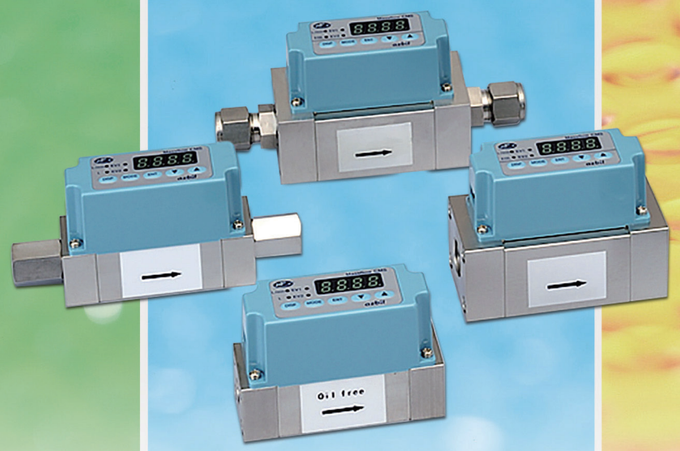
High Performance and High Rangeability Gas Flow Meters

High Accuracy and High Reliability Made Possible by Micro thermal flow sensor

Hign rangeability with ±3% RD accuracy.

(*Standard model only)

The gas mass flowmeter is a mass flowmeter equipped with Azbil's Micro thermal flow sensor, wtich can detect even the slightest gas flows. It combines the superb performance of the Micro thermal flow sensor not available before and Azbil's original rectification mechanism to realize high accuracy, high resolution, and high rangeability, at the cost of a conventional float type flowmeter. Available in a range of functions, the gas mass flowmeter employs a unique method of measuring gas flow rate that is also resistant to changes in temperature and pressure.

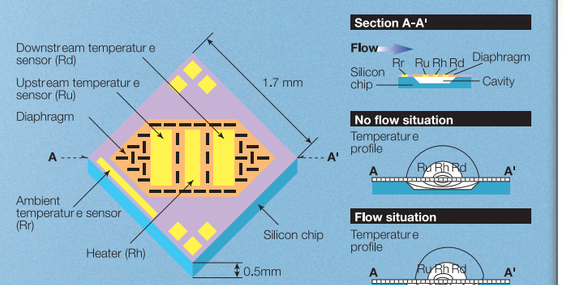


"Standard" indicates the volume flow per minute converted to the conditions of 20°C and 1 atmospheric pressure.

Structure and features of Micro thermal flow sensor

- **Manufactured by silicon micro-machining and thin-film technologies, this thermal type flow sensor is a mere 1.7mm (squared) and 0.5mm thickness.**
- **The use of ultra-precision machining technology minimizes variations in element layout and thermal capacity. High resolution of 1 mm/s in flow speed and high-speed response of approx. 2ms are achieved at the sensor chip level.**

[Principle of Measurement] When gas flow does not exist, the temperature distribution around the heater is symmetric. When the gas starts to flow from Ru to Rd, the temperature at Ru upstream begins to decrease, while the temperature at Rd downstream increases, thus causing a distortion in the symmetry in temperature distribution. This temperature difference between Ru and Rd is used to calculate the mass velocity (velocity x density).



Solutions to a range of application needs ...

Need: A low cost and high accuracy / resolution mass

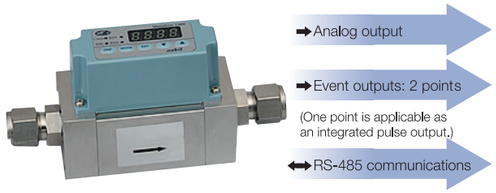
The gas mass flowmeter is equipped with a Micro thermal flow sensor to offer high accuracy of ±3% RD, repeatability of 0.5% FS and wide rangeability of 100:1, all at low cost.

Need: Elbow piping on the upstream side

To obtain stable measurement, a conventional flowmeter requires a long straight piping area at the upstream side. The gas mass flowmeter, however, can assure stable measurement without a straight piping area, due to the superior performance of Micro thermal flow sensor and Azbil's rectification mechanism. It can even be connected to an elbow pipe, allowing for easy design of piping layout.

Need: A mass flowmeter with avariety of functions

The gas mass flowmeter offers a variety of functions, such as instantaneous /integratred flow rate indication, analog output, integrated pulse output, event output (2 points) and analog output scaling function and RS-485 communications.



Need: Low pressure gas measurement

Only 500Pa pressure loss [when the primary pressure is 49kPa for the Model CMS200] due to a special measurement method on the flow path wall.

Need: A suitable model

A broad selection of the gas mass flowmeter is available tomeet any application and price range. Choose asuitable model according to flow rate range, gas passage material, types of gas measured, etc.

Specifications

SUS model

Model No.		CMS9500	CMS0002	CMS0005	CMS0020	CMS0050	CMS0200	CMS0500
Compatible gas types		Air, nitrogen, oxygen (oxygen model only), argon, carbondioxide, city gas 13A (limited to LNG: 45/46MJ), methane(100%), propane (100%) and butane (100%). Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.						
Air flow range [Note 1]		0 to 500 mL/min(standard)	0 to 2 L/min(standard)	0 to 5 L/min(standard)	0 to 20 L/min(standard)	0 to 50 L/min(standard)	0 to 200 L/min(standard)	0 to 500 L/min(standard)
		"Standard" refers to the flow rate after conversion to 20 ℃, 101.325kPa (1 atmosphere).						
Max. measured flow rate for each gas (at 1 atm, 20 ℃) [Note 2]	Air/nitrogen	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Oxygen [Note 3]	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Argon	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Carbon dioxide	250 mL/min	1 L/min	3.3 L/min	10 L/min	25 L/min	100 L/min	250 L/min
	City gas 13A [Note 4]	400 mL/min	1.5 L/min	4.5 L/min	15 L/min	40 L/min	150 L/min	400 L/min
	Methane	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Propane	140 mL/min	0.5 L/min	1.7 L/min	5 L/min	14 L/min	50 L/min	140 L/min
	Butane	100 mL/min	0.4 L/min	1.25 L/min	5 L/min	12 L/min	50 L/min	120 L/min
Measurement accuracy at 20℃,1 atm [Note 5]		5 ≤x< 100mL/min ±1% FS±1digit 100 ≤x≤ 500mL/min ±3% RD±1digit	0.02 ≤x< 0.4L/min ±1% FS±1digit 0.4 ≤x≤ 2L/min ±3% RD±1digit	0.05 ≤x< 1L/min ±1% FS±1digit 1 ≤x≤ 5L/min ±3% RD±1digit	0.2 ≤x< 2L/min ±1% FS±1digit 2 ≤x≤ 20L/min ±3% RD±1digit	0.5 ≤x< 5L/min ±1% FS±1digit 5 ≤x≤ 50L/min ±3% RD±1digit	2 ≤x< 20L/min ±1% FS±1digit 20 ≤x≤ 200L/min ±3% RD±1digit	5 ≤x< 50L/min ±1% FS±1digit 50 ≤x≤ 500L/min ±3% RD±1digit
Minimum display		1 mL/min	0.01 L/min		0.1 L/min		1 L/min	
Display resolution		1 mL/min	0.01 L/min		0.1 L/min		1 L/min	
Operating temperature		-10 to 60℃						
Storage temperature		-20 to +70℃						
Operating humidity		10 to 90% RH (no condensation allowed)						
Connection method		Rc 1/4"					Rc 1/2"	
Body material		SUS303 and SUS316						
Case material		Polycarbonate						
Operating pressure		-0.07 to +1.0MPa						
Pressure resistance		1.5MPa						
Mounting position		Horizontal, flow direction: left → right or right → left						
Rated voltage		12 to 24Vdc						
Sampling cycle		100ms±10ms						
Output signal (instantaneous flow rate)		0-5Vdc / 1-5Vdc / 4-20mA, selectable using control panel keys						
Event output		Open collector output: 2 points						
Event functions		Specify from among instantaneous flow rate upper/lower limit,cumulative flow countup, reverse-cumulative flow countdown, totalizer pulse output (event 2 only), flow rate data serial output (event 1).						
External contact input		1 (reserved for reset of cumulative count, no-voltage contact)						
Electrical connection		Harness with special connector (sold separately)						
Display		4-digit 7-segment LED, selectable between instantaneous flow rate and cumulative flow						
Weight		Approx. 800g					Approx.1400g	Approx.2000g

SUS316 model

Model No.		CMS9500	CMS0002	CMS0005	CMS0020	CMS0050	CMS0200	CMS0500
Compatible gas types		Air, nitrogen, oxygen (oxygen model only), argon, carbon dioxide, city gas 13A (limited to LNG: 45/46MJ), methane (100%), propane (100%) and butane (100%). Semi-standard gas: Acetylene (C_2H_2), ammonia (NH_3) Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.						
Air flow range [Note 1]		0 to 500 mL/min(standard)	0 to 2 L/min(standard)	0 to 5 L/min(standard)	0 to 20 L/min(standard)	0 to 50 L/min(standard)	0 to 200 L/min(standard)	0 to 500 L/min(standard)
		"Standard" refers to the flow rate after conversion to 20 ℃ , 101.325kPa (1 atmosphere).						
Max. measured flow rate for each gas (at 1 atm, 20℃) [Note 2]	Air/nitrogen	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Oxygen [Note 3]	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Argon	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Carbon dioxide	250 mL/min	1 L/min	3.3 L/min	10 L/min	25 L/min	100 L/min	250 L/min
	City gas 13A [Note 4]	400 mL/min	1.5 L/min	4.5 L/min	15 L/min	40 L/min	150 L/min	400 L/min
	Methane	500 mL/min	2 L/min	5 L/min	20 L/min	50 L/min	200 L/min	500 L/min
	Propane	140 mL/min	0.5 L/min	1.7 L/min	5 L/min	14 L/min	50 L/min	140 L/min
	Butane	100 mL/min	0.4 L/min	1.25 L/min	5 L/min	12 L/min	50 L/min	120 L/min
Measurement accuracy at 20℃,1 atm [Note 5]		5 ≤x< 100mL/min ±1% FS±1digit 100 ≤x≤ 500mL/min ±3% RD±1digit	0.02 ≤x< 0.4L/min ±1% FS±1digit 0.4 ≤x≤ 2L/min ±3% RD±1digit	0.05 ≤x< 1L/min ±1% FS±1digit 1 ≤x≤ 5L/min ±3% RD±1digit	0.2 ≤x< 2L/min ±1% FS±1digit 2 ≤x≤ 20L/min ±3% RD±1digit	0.5 ≤x< 5L/min ±1% FS±1digit 5 ≤x≤ 50L/min ±3% RD±1digit	2 ≤x< 20L/min ±1% FS±1digit 20 ≤x≤ 200L/min ±3% RD±1digit	5 ≤x< 50L/min ±1% FS±1digit 50 ≤x≤ 500L/min ±3% RD±1digit
Minimum display		1 mL/min	0.01 L/min		0.1 L/min		1 L/min	
Display resolution		1 mL/min	0.01 L/min		0.1 L/min		1 L/min	
Operating temperature		-10 to +60℃						
Storage temperature		-20 to +70℃						
Operating humidity		10 to 90% RH (no condensation allowed)						
Connection method		9/16-18 UNF, Rc 1/4", 1/4" Swagelok, and 1/3" VCR or equiv., selectable by model No.					3/4-16 UNF, Rc 1/2", 1/2" Swagelok, and 3/8" VCR or equiv., selectable by model No.	
Body material		SUS316						
O-ring material		Fluoro rubber: Gas type code (N) (S) EPDM: Gas type code (E) EPDM: Ethylene-Propylene-Dlene-Methylene (rubber)						
Case material		Polycarbonate						
Operating pressure		-0.07 to +1.0MPa						
Pressure resistance		1.5MPa						
Mounting position		Horizontal, flow direction: left → right or right → left						
Rated voltage		12 to 24Vdc						
Sampling cycle		100ms±10ms						
Output signal (instantaneous flow rate)		0-5Vdc / 1-5Vdc / 4-20mA, selectable using control panel keys						
Event output		2 open collector outputs						
Event functions		Specify from among instantaneous flow rate upper/lower limit,cumulative flow countup, reverse-cumulative flow countdown, totalizer pulse output (event 2 only), flow rate data serial output (event 1).						
External contact input		1 (reserved for reset of cumulative count, no-voltage contact)						
Electrical connection		Harness with special connector (sold separately)						
Display		4-digit 7-segment LED, selectable between instantaneous flow rate and cumulative flow						
Weight		Approx. 800g					Approx.1400g	Approx.2000g

Notes
1. Flow rate range for air. Using the control panel keys, user can select the desired gas type and can also change the scaling of the analog output.
2. The flowmeter can also be used for some gases not listed in this table by means of the gas type conversion factor function. For details, contact Azbil Corporation.
3. Only models with the catalog listing CMS_ _ _ _ B _ _ S _ _ _ 1 _ _ are for oxygen use.
4. City gas 13A is based on the gases shown below, which are produced from LNG. If the composition of your 13A is different, contact Azbil Corporation.
5. Accuracy infromation applies to air/nitrogen or oxygen (oxygen gas model).

Gas type name	Calorific value (MJ)	Methane (%)	Ethane (%)	Propane (%)	Butane (%)
City gas 13A-46MJ	46.04655	88	5.8	4.5	1.7
City gas 13A-45MJ	45.007	88.9	6.8	3.1	1.2

Specifications

Hydrogen/helium gas model (SUS316)

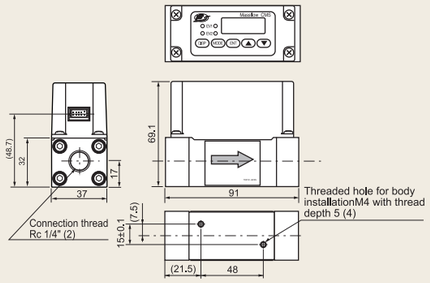
Model No.		CMS0010	CMS0050	CMS0200	CMS0500	CMS1000	CMS2000
Compatible gas types		Hydrogen and helium. Gas must be dry and without corrosive components (chlorine, sulfur, acid, etc.). It must also be clean, without dust or oil mist.					
Flow range [Note 1]		0 to 10 L/min(standard)	0 to 50 L/min(standard)	0 to 200 L/min(standard)	0 to 500 L/min(standard)	0 to 1000 L/min(standard)	0 to 2000 L/min(standard)
		"Standard" refers to the flow rate after conversion to 20 ℃ , 101.325kPa (1 atmosphere).					
Max. measured flow rate for each gas (at 1 atm, 20 ℃) [Note 2]	Hydrogen	10 L/min	50 L/min	200 L/min	500 L/min	1000 L/min	2000 L/min
	Helium	10 L/min	50 L/min	200 L/min	500 L/min	1000 L/min	2000 L/min
Measurement accuracy at 20℃,1 atm		0.1 ≤x< 2L/min ±1% FS±1digit 2 ≤x≤ 10L/min ±5% RD±1digit	0.5 ≤x< 10L/min ±1% FS±1digit 10 ≤x≤ 50L/min ±5% RD±1digit	2 ≤x< 40L/min ±1% FS±1digit 40 ≤x≤ 200L/min ±5% RD±1digit	5 ≤x< 100L/min ±1% FS±1digit 100 ≤x≤ 500L/min ±5% RD±1digit	10 ≤x< 200L/min ±1% FS±1digit 200 ≤x≤ 1000L/min ±5% RD±1digit	20 ≤x< 400L/min ±1% FS±1digit 400 ≤x≤ 2000L/min ±5% RD±1digit
Minimum display		0.01 L/min	0.1 L/min	1 L/min	1 L/min	1 L/min	5 L/min
Display resolution		0.01 L/min	0.1 L/min	1 L/min	1 L/min	1 L/min	5 L/min
Operating temperature		-10 to +60℃					
Storage temperature		-20 to +70℃					
Operating humidity		10 to 90% RH (no condensation allowed)					
Connection method		9/16-18 UNF, Rc 1/4", 1/4" Swagelok, and 1/3" VCR or equiv., selectable by model No.			3/4-16 UNF, Rc 1/2", 1/2" Swagelok, and 3/8" VCR or equiv., selectable by model No.		
Body material		SUS316					
Case material		Polycarbonate					
Operating pressure		-0.07 to +1.0MPa					
Pressure resistance		1.5MPa					
Mounting position		Horizontal, flow direction: left → right or right → left					
Rated voltage		12 to 24Vdc					
Sampling cycle		100ms±20ms					
Output signal (instantaneous flow rate)		0-5Vdc / 1-5Vdc / 4-20mA, selectable using control panel keys					
Event output		2 open collector outputs					
Event functions		Instantaneous flow rate upper/lower limit, cumulative flow countup, reverse-cumulative flow countdown, totalizer pulse output (event 2 only), flow rate data serial output (event 1).					
External contact input		1 (reserved for reset of cumulative count, no-voltage contact)					
Electrical connection		Harness with special connector (sold separately)					
Display		4-digit 7-segment LED, selectable between instantaneous flow rate and cumulative flow					
Weight		Approx. 800g			Approx. 1400g		Approx.2000g

Notes
1. Flow rate range for hydrogen and helium. Using the control panel keys, user can change the scaling of the analog output.
2. The flowmeter can also be used for mixed gases containing hydrogen or helium gases by means of the gas type conversion factor function. For details, contact Azbil Corporation.

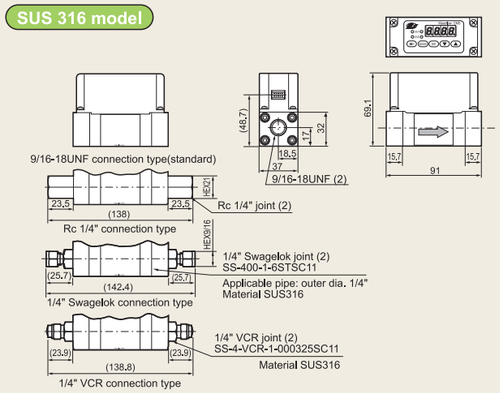
External Dimensions (unit:mm)

CMS9500/0002/0005/0020/0050 (SUS model and SUS316 model)

SUS model

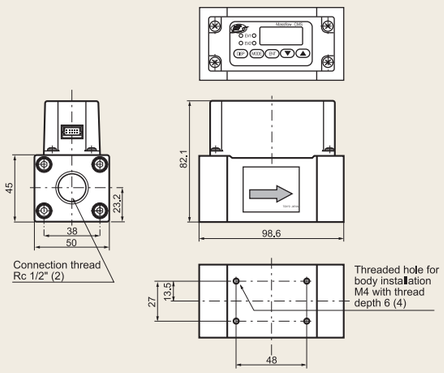


SUS 316 model

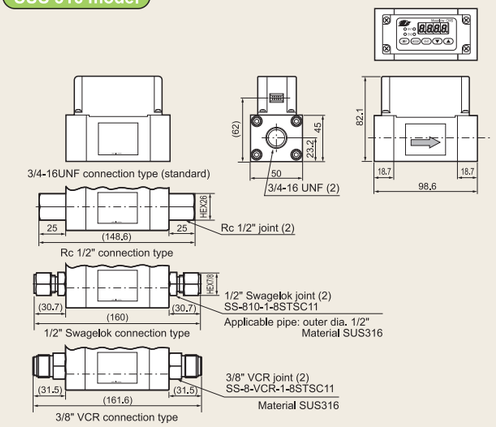


CMS0200 (SUS model and SUS316 model)

SUS model

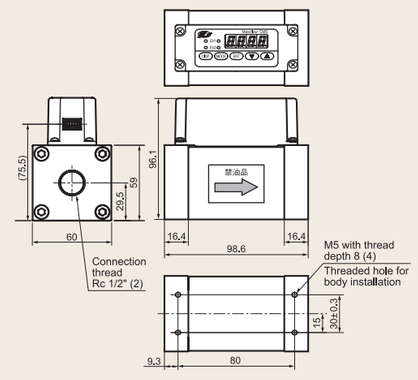


SUS 316 model

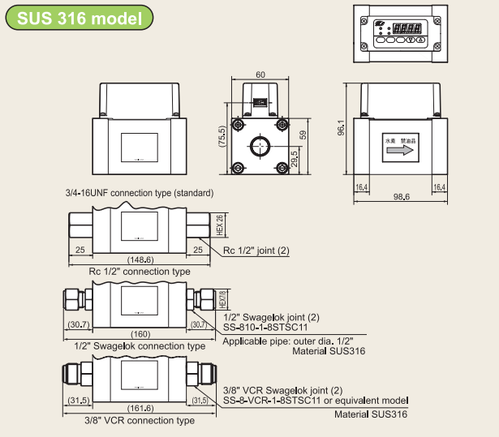


CMS0500 (SUS model and SUS316 model)

SUS model

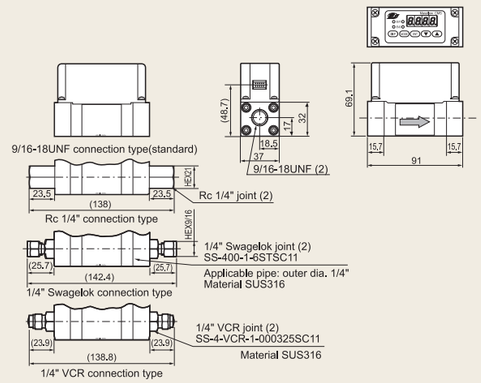


SUS 316 model

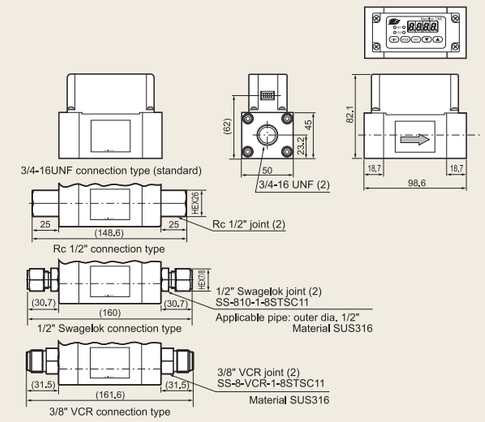


External Dimensions (unit:mm)

CMS0010/0050/0200 (Hydrogen/helium model (SUS316))



CMS0500/1000 (Hydrogen/helium model (SUS316))



CMS2000 (Hydrogen/helium model (SUS316))