

### Flow Meter with Flow Controller (Not Subject to Load Pressure Change)

# **MODEL 2503F SERIES**

The constant flow valve Model 2203 that permits constant flow and the precision flow meter RK1400 are combined in this flow meter to permit high-precision measurement and control of a wide flow range, from very small flow to medium flow, when the pressure on the load side (outlet side) changes.

#### **Features**

- This flow meter ensures constant flow under constant pressure on its inlet side even if the load pressure loss on the outlet side
- The measuring section of the flow meter is based on the highprecision float type flow meter RK1400.
- The precision valve permits smooth and stable control of very
- · Constant pressure on the inlet side eliminates pressure errors of the float type flow meter, allowing a complete flow control system to be configured.

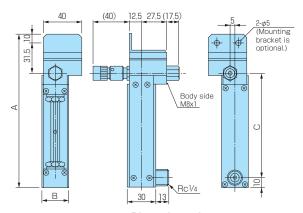


#### **Standard Specifications**

Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used. * Option: Scales for two types of fluids
Flow range (FS)	From 1–10 ML/MIN to 2–20 L/MIN (Refer to the Capacity Table on page 65.)
Accuracy	FS ±2% (Measurement point) (under specified constant primary pressure)
Control pressure	The pressure difference between inlet and outlet must be 0.05 MPa or more.
Proof pressure	5 L/MIN or less: 0.8 MPa 10 L/MIN or more: 0.5 MPa
Available scale	10:1

Material	SS AI		
Body block	SUS316	Al, Brass	
Tapered tube	Pyrex <sup>®</sup> , glass		
Packing	Viton®	NBR	
Float	Pyrex, SUS316, glass		
Protective cover	Acrylic resin		
Heat resistance	MAX60°C		
Connection	Rc 1/4 (Standard), Rc 1/8 (Optional)		

#### **Dimensions**



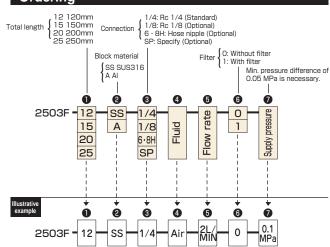
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## Dimensions of parts per length designation code



Part Code	12	15	20	25
Α	163.5	193.5	243.5	293.5
В	29	29	31	31
С	112	142	192	242
D	80	110	160	210
Е	86	116	166	216

# Ordering



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### Flow Meter with Flow Controller (Not Subject to Inlet Pressure Change)

# **MODEL 2504FR SERIES**

The constant flow valve Model 2204 that permits constant flow and the precision flow meter RK1400 are combined in this flow meter to permit high-precision measurement and control of a wide flow range from very small flow to medium flow when the gas supply pressure (inlet side) changes.

#### **Features**

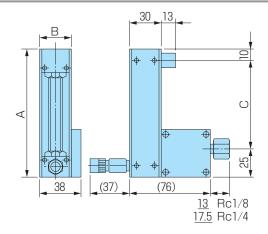
- This flow meter ensures constant flow under the constant pressure on its outlet side even if the pressure on the inlet side changes.
- The flow controller is made on the basis of the Model 2204 with excellent precision control characteristics, permitting smooth control of very small flow.
- The measuring section of the flow meter made on the basis of the high-precision float type flow meter RK1400 ensures highly reliable flow.



#### **Standard Specifications**

Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used.  * Option: Scales for two types of fluids
Flow range (FS)	From 1–10 ML/MIN to 1–10 L/MIN (Refer to the Capacity Table on page 65.)
Accuracy	FS ±2% (Measurement point) The flow fluctuation is within FS ±2% when the inlet pressure changes to 0.07–0.7 MPa under the flow meter outlet pressure condition.
Control pressure	The pressure difference between inlet and outlet must be 0.07 MPa or more.
Proof pressure	5 L/MIN or less: 0.8 MPa 10 L/MIN or more: 0.5 MPa
Available scale	10:1

#### **Dimensions**

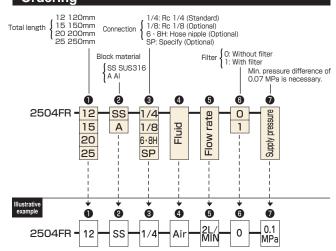


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Material	SS AI		
Body block	SUS316	Al, Brass	
Tapered tube	Pyrex®, glass		
Packing	Viton <sup>®</sup>	NBR	
Float	Pyrex, SUS316, glass		
Protective cover	Acrylic resin		
Heat resistance	MAX60°C		
Connection	Rc 1/4 (Standard), Rc 1/8 (Optional)		

### Ordering



\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

#### Dimensions of parts per length designation code

Code Part	12	15	20	25
Α	120	150	200	250
В	29	29	31	31
С	85	115	165	215
D	80	110	160	210
Е	86	116	166	216



### Purge Flowmeter (for Scientific Instrumentation System)

# **MODEL RK1000 SERIES**

This is a glass tube float type flowmeter materialized through our all-out effort at streamlining the production line to offer users a low-cost model that can be shipped in a reduced period of delivery. While it is outstandingly compact (total length of the smallest type: 80 mm), it provides high performance in stability that bears comparison with any high precision models and is optimum to form a part of the customer's scientific instrumentation system.

#### **Features**

- Superior stability
- Economical
- Super-compact
- Wide variations

#### **Applications**

- For integration into equipment panel
- For gas purge systems
- For measurement of welding gas flows
- · For various types of analyzers
- For semiconductor manufacturing equipment

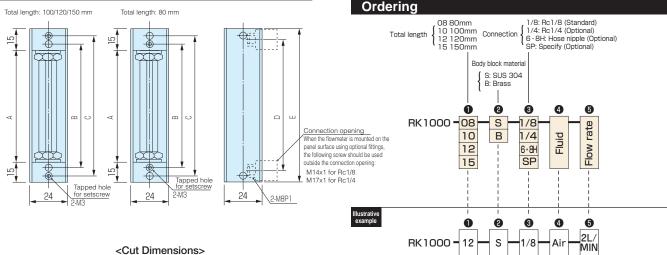


#### **Standard Specifications**

	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas)
Fluids	For other gases, consultation is necessary regarding
	conversion conditions or calibration by actual gas is to be used.
Flow range (Full scale)	100ML, 150ML, 200ML, 300ML, 500ML/MIN
	1L, 2L, 3L, 5L, 10L, 15L, 20L/MIN
Accuracy	FS±5% (Measurement point)
Proof pressure	0.8 MPa for 5 L/MIN or less
	0.5 MPa for 10 L/MIN or more
Available scale	10:1

Materials	S	BS	
Body block and some other components	SUS303, SUS304	Brass	
Tapered tube	Pyrex <sup>®</sup> , glass		
Packing	Viton <sup>®</sup>	NBR	
Float	Pyrex, SUS 316, glass		
Protective cover	Acrylic resin		
Temperature resistance	MAX60°C		
Connection	Rc1/8 (Standard); Rc1/4 (Optional)		

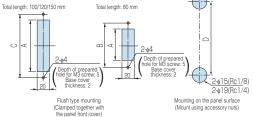
#### **Dimensions**



#### Cut Dimension

# Dimensions of parts per length designation code

Code	08	10	12	15
Α	50	70	90	120
В	60	80	100	130
С	70	90	110	140
D	65	85	105	135
Е	80	100	120	150



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Purge Flowmeter (for Scientific Instrumentation System)

# **MODEL RK1050 SERIES**

This is a completely renewed model of the existing compact, economical KOFLOC RK1000. With its surprisingly slender appearance, this new compact model provides high stability performance that bears comparison with any high precision models. It can be ideally integrated in the customer's scientific instrumentation system. Reduced period of delivery is ensured.

#### **Features**

#### Superior stability

Superior stability is ensured through thorough antistatic measures and using the same try-flat, rib-guid glass tube as that used for high precision models.

#### Economical

Economy and reduced period of shipping achieved through our allout effort at process streamlining such as introduction of mass production system using advanced printing technology

#### Super-compact

Space-saving as its total length ranges from 84 mm to 154 mm.

#### Wide variations

A broad range of variations is available in maximum flow rate, total length and materials of construction to meet diverse applications from a variety of fields.

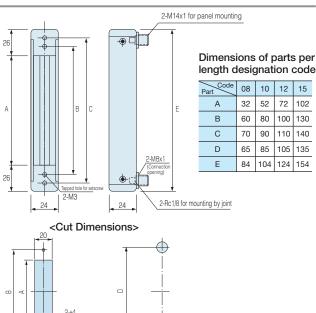
#### **Applications**

- For integration into equipment panel
- For gas purge systems
- For measurement of welding gas flows
- · For various types of analyzers
- For semiconductor manufacturing equipment

### Standard Specifications

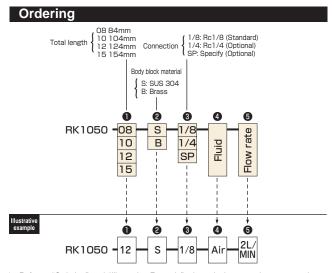
Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas)	
For other gases, consultation is necessary regarding whether	
conversion conditions or calibration by actual gas is to be used.	
100ML, 150ML, 200ML, 300ML, 500ML/MIN	
1L, 2L, 3L, 5L, 10L, 15L, 20L/MIN	
FS±5% (Measurement point)	
0.8 MPa for 5 L/MIN or less	
0.5 MPa for 10 L/MIN or more	
10:1	

#### **Dimensions**





Materials	S	BS	
Body block and some other components	SUS303, SUS304	Brass	
Tapered tube	Pyrex <sup>®</sup> , glass		
Packing	Viton <sup>®</sup>	NBR	
Float	Pyrex, SUS 316		
Protective cover	Acrylic resin		
(Temperature resistance)	MAX60°C		
Connection	Rc1/8 (Standard); Rc1/4 (Optional special joint		



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

Mounting on the panel surface (Mount using accessory nuts)

Depth of prepared hole for M3 screw: 5



### Simplified Flexible Flow Meter (with Exchangeable Tapered Tube)

# **MODEL RK1100 SERIES**

The flexible flow meter is designed to permit easy disassembly, cleaning, and reassembly. It is ideal for equipment that must be disassembled for maintenance. Users can change the flow meter tube only without changing the block.

Features

#### • Easy disassembly and reassembly

It can be disassembled just with a screwdriver and wrench. This flow meter is ideal when frequent cleaning or tube change is required.

#### Sophisticated design

Equipped with many shaped component parts and an alumite body with a satin finish, the product has a sophisticated design.

#### • High-precision flow meter

A high-precision flow meter tube equivalent to that used in the precision flow meter RK1450 is used.

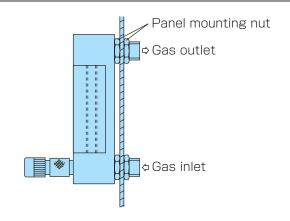
 Models (1100V and 1100VP) equipped with a valve are also available.

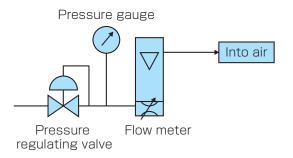
The models with a needle valve come in two types – a precision needle valve type 1100PV and a simplified needle valve type 1100V.

#### **Applications**

- In combination with various measuring instruments
- Measurement of pipe lines
- Compressors
- · Semiconductor related equipment

#### **Example of use**







#### **Exploded view**



1	Panel mounting nut	7	Backboard base			
2	Gas outlet joint	8	Lower block			
3	Gas inlet joint	9	Glass tapered tube			
4	Wrench for disassembly/reassembly	10	Acrylic cover			
(5)	Glass tube retainer	11)	Needle valve			
6	Upper block					

#### **Standard Specifications**

Fluids	$\label{eq:Air,N2,O2,H2,He,Ar,CO2} \end{cases} (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used.$							
	RK1100	10ML/MIN-20L/MIN						
Flow range (FS)	RK1100PV	TOWNE IVIIIN-201/IVIIIN						
	RK1100V	1L/MIN-20L/MIN						
Accuracy	FS ±2% (Mea	surement point) * Option: FS ±1% (Measurement point)						
Proof pressure	0.5MPa							
Available scale	10:1 * Option	10:1 * Option 20:1						

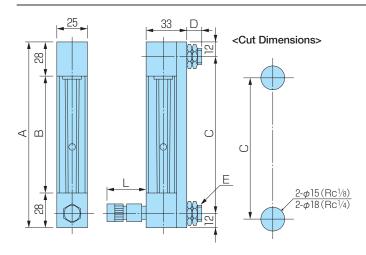
Material	S	Al						
Body block	SUS303 · 304	Al						
Tapered tube	Pyrex <sup>®</sup> , glass							
Packing	Viton®	NBR						
Float	Pyrex®, SUS316, glass							
Protective cover	Acrylic	resin						
Heat resistance	MAX60°C							
Connection	Rc 1/4 (Standard), Rc 1/8 (Optional)							

#### **Capacity Table**

#### Air (Flow rate under atmospheric pressure)

Max. flow rate	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20
Total length	ML/MIN	L/MIN														
120mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200mm	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0
250mm	_	_	_	_	_	_	0	0	0	0	0	0	0	0	0	0

#### **Dimensions**



#### Dimensions of parts per length designation code

Part	Α	В	С	[	)	E			
Code	A	Ь	O	Rc1/8	Rc1/4	Rc1/8	Rc1/4		
12	120	64	96	10	14	M14X1	M17X1		
15	150	94	126	10	14	M14X1	M17X1		
20	200	144	176	10	14	M14X1	M17X1		
25	250	194	226	10	14	M14X1	M17X1		

Model	L
RK1100	0
RK1100V	33MAX
RK1100PV	40

#### Ordering Blank: No valve VU: Simplified upper valve (Optional) VD: Simplified lower valve PVU: Precision upper valve (Optional) PVD: Precision lower valve Total Block material S SUS304 A AI Total length 12 120mm 15 150mm 20 200mm 25 250mm Connection 1/4: Rc 1/4 (Standard) 1/8: Rc 1/8 (Optional) 6 · 8H: Hose nipple (Optional) SP: Specify (Optional) ġ 4 0 RK1100 12 S 1/4 Supply pressure Flow rate Α Fluid VU 15 1/8 VD 6·8H 20 PVU 25 SP PVD 0 8 8 4 6 6 0 2L/ MIN 0.1 MPa S 12 RK1100 - PVD 1/4 Air

<sup>\*</sup> Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Low-cost Flow Meter (for Immediate Delivery)

# **MODEL RK1150 SERIES**

These revolutionary low-price flow meters are massproduced for quick delivery. The body material is made of high corrosion-resistant engineering plastic molded into elegant shapes.

#### **Features**

- Low price
- Rationalized mass production with a resin mold for low cost and quick delivery.
- Easy disassembly/reassembly
- Users can easily disassemble the flow meter for cleaning.
- Elegant design
- Shapely panel surface without screws and compact design
- Flow meters equipped with a flow control valve are also available.

Flow meters with a simple needle valve or a precision needle valve reduce installation space.

OEM supply is possible.

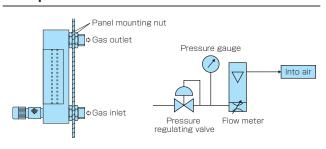
The body color, label, and valve shape can be specified for supply on an OEM basis.



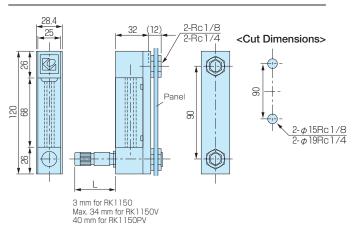
#### **Standard Specifications**

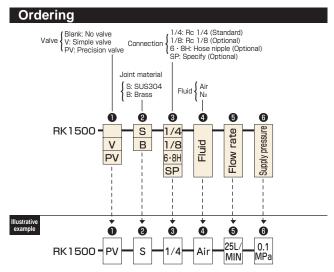
Fluids	Exclusively for air a	nd N <sub>2</sub>						
	RK1150	100ML,2	00ML,500ML/MIN					
Flow range (FS)	RK1150PV 5L,10L,25		5L,30L/MIN					
	RK1150V	5L,10L,2	5L,30L/MIN					
Accuracy	FS ±10% (Measurement point)							
Proof pressure	0.5MPa							
Available scale	10:1							
Material	S		BS					
Body block		Pla	stic					
Tapered tube		Pyrex®	, glass					
Packing	Viton®		NBR					
Float		Pyrex, SUS	S316, glass					
Protective cover		Acrylic	c resin					
Joint	SUS304		Brass					
Temperature resistance		MAX	40°C					
Connection	Rc 1/4 (Standard); Rc 1/8 (Optional)							

#### **Example of use**



#### **Dimensions**





\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax. WIODEL RK 1200 SEP

This is a grade high precision float type flowmeter combined with a needle valve capable of very accurate flow control. It is ideal for measurement and control of minute flows.

#### **Features**

- Capable of controlling ultra-minute flows
- A needle valve incorporated to maximize precision control of flows
- Two types of valve arrangement available: at the top or bottom of the meter at the user's choice
- Wide variations

#### **Applications**

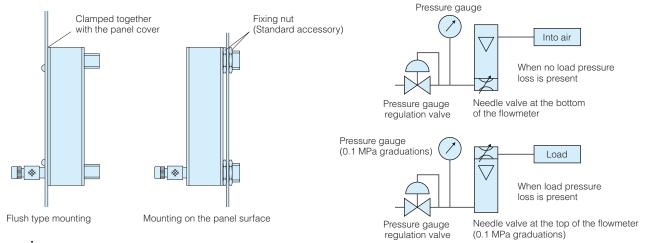
- For integration into your equipment panel
- For gas devices to be used on the semiconductor manufacturing site
- For biotechnology industries
- For vacuum line control



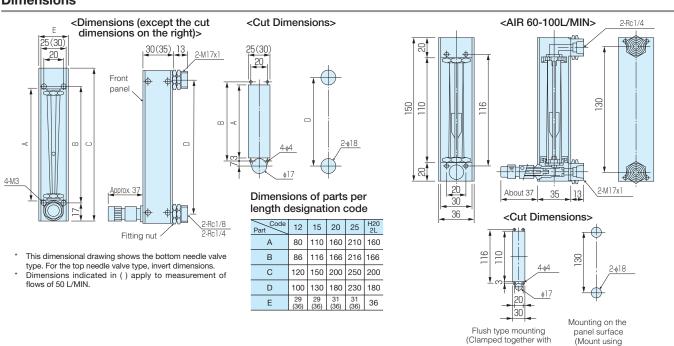
the panel front cover)

accessory nuts)

#### Layout Example with Model RK1200



### Dimensions



#### **Standard Specifications**

	Gases	Liquids									
Fluids	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas) For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used.  * Optional: Scale indicating two types of fluids	Standard fluid: Water For other liquids, consultation is necessary regarding whether conversion conditions or calibration by actual liquid is to be used.									
Flow range	0.5-5 ML/MIN to 10-100 L/MIN (See the Capacity Table below.)	0.5-5 ML/MIN to 0.2-2 L/MIN (See the Capacity Table below.)									
riow range	* Optional: 0.5-3 ML/MIN	* Optional: 0.5-3 ML/MIN									
Accuracy	FS±2% (Measurement point) * Optional: FS±1% (Measurement point)	FS±2% (Measurement point)									
	1.0 MPa for 100 ML/MIN or less	1.0 MPa for 5 ML/MIN or less									
Proof pressure	0.7 MPa for 5 L/MIN or less	0.7 MPa for 150 ML/MIN or less									
	0.5 MPa for 10 L/MIN or more	0.5 MPa for 200 ML/MIN or more									
Available scale	10:1 * Optional: 20:1										
Materials	SS	BS									
Body block	SUS316	Brass									
Tapered tube	Pyrex	), glass									
Packing	Viton <sup>®</sup>	NBR									
Float	Pyrex, SUS316	, SUS304, glass									
Protective cover	Acryli	c resin									
Temperature resistance	MAX	MAX60°C									

#### **Capacity Table**

Connection end

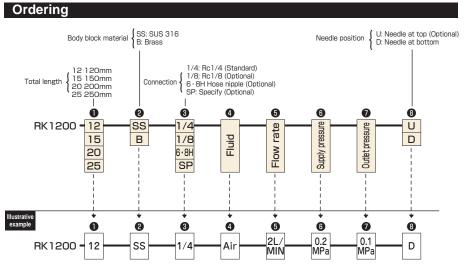
#### Air (Flow rate at atmospheric pressure)

Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20	30	50	100
Total length	ML/MIN	L/MIN																		
120mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_
150mm	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200mm	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_
250mm	_	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_

Rc1/4 (Standard); Rc1/8 (Optional)

#### H20

	Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2
Tota	al length	ML/MIN	L/MIN	L/MIN									
	120mm	0	0	0	0	0	0	0	0	0	0	0	_
	150mm	0	0	0	0	0	0	0	0	0	0	0	0
	200mm	0	0	0	0	0	0	0	0	0	0	0	0
	250mm	0	0	0	0	0	0	0	0	0	0	0	_



<sup>\*</sup> Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



# **MODEL RK120X SERIES**

This multiple flow meter with a needle valve is made by combining several types of flow meter for controlling various flows in a laboratory. It is designed based on the RK1200, a flow meter with precision needle valve, and has

been verified to have outstanding reliability.

#### **Features**

#### · Multiple control of two to four flow meters

Two to four flow meters can be attached to one unit to permit control of various gases in various flow ranges.

#### Various flow ranges

The flow meter can measure a variety of flows ranging from the very small flow of full-scale 5 ML/MIN to 20 L/MIN.

#### • High-precision measurement and control

This flow meter is designed based on the precision flow meter RK1200 and permits control of very small flow and high-precision measurement (FS ±2%).

#### **Applications**

- Control of multiple components
- Multiple range control
- · Flow control in laboratories



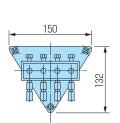
#### **Standard Specifications**

Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used.
Flow range	From 0.5-5 ML/MIN to 2-20 L/MIN (Refer to the Capacity Table on page 65.)
Accuracy	FS ±2% (Measurement point) * Optional: FS ±1% (Measurement point)
Proof pressure	0.5MPa
Available scale	10:1 * Optional 20:1

Material	SS	BS						
Body block	SUS316	Brass						
Tapered tube	Pyrex®, glass							
Packing	Viton <sup>®</sup> * Option (1)	NBR						
Float	Pyrex, SUS316, glass							
Protective cover	Acrylic	c resin						
Temperature resistance	MAX60°C							
Connection	Rc 1/4 (Standard), Rc 1/8 (Optional)							

Option (1): Fluorocarbon resin, Kalrez, Perfluoro, etc.

#### **Dimensions**

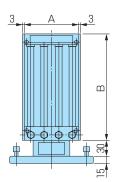


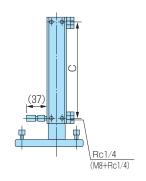
#### Dimensions of each part

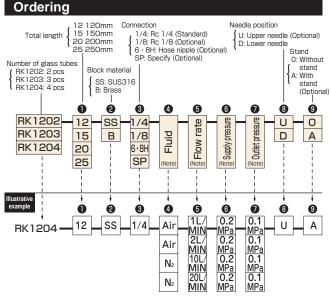
Model	Α	В											
1202	50	120	150	200	250								
1203	75	120	150	200	250								
1204	100	120	150	200	250								

	С
B=120	100
B=150	130
B=200	180
B=250	230

#### <Cut Dimensions>







(Note) Specify the flow rates in increasing order from the left, as many as the number of glass tubes for (4), (5), (6), and (7).

Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a

quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### Flow Meter for Gas Mixing

# **MODEL RK120XM SERIES**

The flow meter for gas mixing uses a KOFLOC multiple flow meter to mix multicomponent fluids. Connection of pipes to respective gas inlets and the mixed gas outlet permit gases to be mixed. This flow meter is ideal for easy gas mixing in laboratories and studies.

#### **Features**

- The simple structure facilitates maintenance.
- The precision needle valve allows easy, fine control of flow.
- All the parts are super-cleaned to ensure excellent cleanliness.
- The flow meter is made into two- to four-component types to handle various gases in various flow ranges.



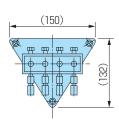
#### **Standard Specifications**

Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used.
Flow range	From 5–50 ML/MIN to 1–10 L/MIN 10 L/MIN or less per line and 20 L/MIN or less in total (Refer to the Capacity Table on page 65.)
Accuracy	FS ±2% (Measurement point) * Optional: FS ±1% (Measurement point)
Proof pressure	0.5MPa
Available scale	10:1 * Optional 20:1

Material	SS	BS						
Body block	SUS316	Brass						
Tapered tube	Pyrex <sup>®</sup> , glass							
Packing	Viton ® * Option (1)	NBR						
Float	Pyrex, SUS316, glass							
Protective cover	Acrylic	c resin						
Temperature resistance	MAX60°C							
Connection	Rc 1/4 (Standard), Rc 1/8 (Optional)							

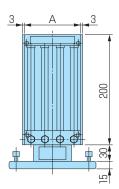
<sup>\*</sup> Option (1): Fluorocarbon resin, Kalrez, Perfluoro, etc

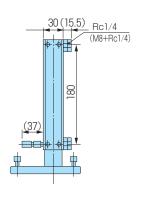
#### **Dimensions**

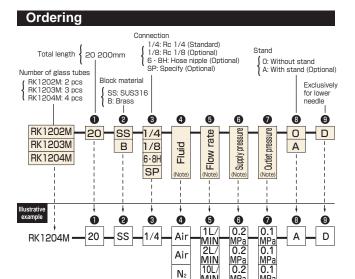


#### Dimensions of each part

Model	Dimension A
1202M	50
1203M	75
1204M	100







(Note) Specify the flow rates in increasing order from the left, as many as the number of glass tubes for (4), (5), (6), and (7).

\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### Flowmeter with **Precision Needle Valve** (for Accurate Flow Control)

# **MODEL RK1250 SERIES**

The Model RK1250 Series Flowmeter is a completely renewed model of existing KOFLOC RK1200, designed as a flowmeter that can be integrated into the customer's equipment. A combination of a grade high precision float type flowmeter with a needle valve capable of very accurate flow control provides a flowmeter ideal for measurement and control of trace flows.

#### **Features**

- · Capable of controlling ultra-minute flows
- Can respond to a wide range of flows from ultra-minute flows of 0.5-3 ML/MIN to flows of 3-30 L/MIN.
- The incorporated precision needle valve allows a delicate con-

The effective revolving speed of the needle valve can be maximized by specifying a maximum flow and normal supply pressure.

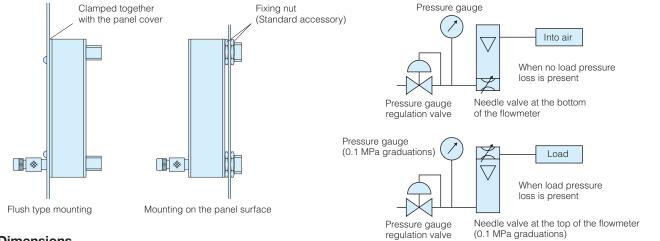
- Wide variations
- Four total lengths of the flowmeter are available: 126, 156, 206, and 256 mm, for your selection according to your needs.
- Two types of valve arrangement
- The needle valve can be laid out either at the top or at the bottom of the meter. Choose the type that best suits your needs.
- Measurement and control of water flows also possible Measurement and control of water flows not exceeding 1 L/MIN are also possible.

#### **Applications**

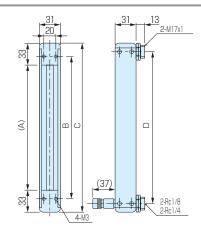
- · For integration into your equipment panel
- · For gas devices to be used on the semiconductor manufacturing site
- For biotechnology industries
- For vacuum line control



#### Layout Example with Model RK1250



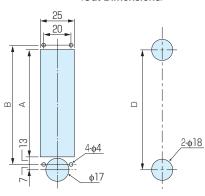
#### **Dimensions**



#### Dimensions of parts per length designation code

Code	12	15	20	25								
Α	60	90	140	190								
В	86	116	166	216								
С	126	156	206	256								
D	100	130	180	230								

#### <Cut Dimensions>



Flush type mounting (Clamped together with the panel front cover)

Mounting on the panel surface (Mount using accessory nuts)

#### **Standard Specifications**

Gases	Liquids
Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas) For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used. * Optional: Scale indicating two types of fluids	Standard fluid: Water For other liquids, consultation is necessary regarding whether conversion conditions or calibration by actual liquid is to be used.
0.5-5 ML/MIN to 3-30 L/MIN (See the Capacity Table below.)  * Optional: 0.5-3 ML/MIN	0.5-5 ML/MIN to 0.1-1 L/MIN (See the Capacity Table below.)  * Optional: 0.5-3 ML/MIN
FS±2% (Measurement point) * Optional: FS±1% (Measurement point)	FS±2% (Measurement point)
1.0 MPa for 100 ML/MIN or less	1.0 MPa for 5 ML/MIN or less
0.7 MPa for 5 L/MIN or less	0.7 MPa for 150 ML/MIN or less
0.5 MPa for 10 L/MIN or more	0.5 MPa for 200 ML/MIN or more
10:1 * Optional: 20:1	
SS	BS
SUS316	Brass
Pyrex®,	, glass
Viton®	NBR
Pyrex, SUS	316, glass
Acrylic	resin
MAX	
	For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used.  *Optional: Scale indicating two types of fluids  0.5-5 ML/MIN to 3-30 L/MIN (See the Capacity Table below.)  *Optional: 0.5-3 ML/MIN  FS±2% (Measurement point) *Optional: FS±1% (Measurement point)  1.0 MPa for 100 ML/MIN or less  0.7 MPa for 5 L/MIN or less  0.5 MPa for 10 L/MIN or more  10:1 *Optional: 20:1  SS  SUS316  Pyrex®  Viton®  Pyrex, SUS  Acrylic

#### **Capacity Table**

Connection end

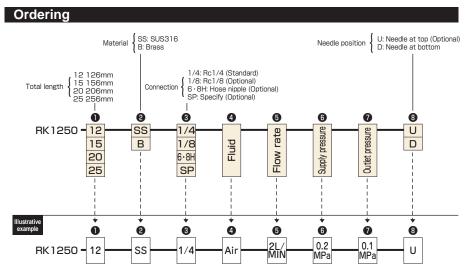
#### Air (Flow rate at atmospheric pressure)

Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20	30
Total length	ML/MIN	L/MIN																
126mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156mm	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
206mm	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0
256mm	_	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0

Rc1/4 (Standard); Rc1/8 (Optional)

#### H20

Max. flow rate	5	10	20	30	50	100	150	200	300	500	1
Total length	ML/MIN	L/MIN									
126mm	0	0	0	0	0	0	0	0	0	0	0
156mm	0	0	0	0	0	0	0	0	0	0	0
206mm	0	0	0	0	0	0	0	0	0	0	0
256mm	0	0	0	0	0	0	0	0	0	0	0



<sup>\*</sup> Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

# **MODEL 1350 SERIES**

The easy-to-handle RK1350 Series for laboratory use is ideal for high-precision measurement and control of very small flow.

#### **Features**

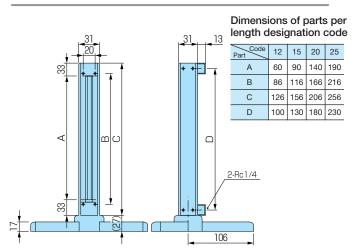
- Calibration with actual standard gases for high-precision flow control.
- · Control of very small flow
- Measurement of wide-ranging flow from 0.5–5 ML/MIN to 3–30 I /MIN
- The flow meters come in four types with total length of 126, 156, 206, or 256 mm.



#### **Standard Specifications**

	Gas	Liquid						
Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used. * Option: Scales for two types of fluids	Standard fluid (Water) For other liquids, please consult us regarding conversion conditions or calibra tion with actual liquid to be used.						
Flow range	0.5-5ML/MIN to 3-30L/MIN (Refer to the Capacity List on page 63.) * Option: 0.5–3 ML/MIN	0.5-5ML/MIN to 0.1-1L/MIN (Refer to the Capacity Table on page 63.) * Option: 0.5–3 ML/MIN						
Accuracy	FS ±2% (Measurement point) * Option: FS ±1% (Measurement point)	FS ±2% (Measurement point)						
Proof pressure	100 ML/MIN or less: 1.0 MPa 5 L/MIN or less: 0.7 MPa 10 L/MIN or more: 0.5 MPa	5 ML/MIN or less: 1.0 MPa 150 ML/MIN or less: 0.7 MPa 200 ML/MIN or less: 0.5 MPa						
Available scale	10:1 * Option 20:1							
Material	SS	BS						
Body block	SUS316	Brass						
Tapered tube	Pyrex <sup>®</sup>	, glass						
Packing	Viton <sup>®</sup>	NBR						
Float	Pyrex®, SU	S316, glass						
Protective cover	Acryli	c resin						
Temperature resistance	MAX	60°C						
End connection	Rc 1/4 (Standard)	, Rc 1/8 (Optional)						

#### **Dimensions**



#### **Ordering** Blank: No valve Elanik: No valve VU: Upper valve (Optional) Block material SS: SUS316 B: Brass Total length Connection { 1.74: Rc 1.74 (Standard) 1.78: Rc 1.78 (Optional) 6 · 8H: Hose nipple (Optional) SP: Specify (Optional) 12 126mm 15 156mm 20 206mm 25 256mm 8 2 8 4 6 RK1350 rate 12 SS 1/4 Outlet pressure VU Fluid 15 В 1/8 VD 20 6·8H SP 25 0 8 3 4 6 0 8 0 0.2 21 0.1 RK1350 VD 12 MIŃ MPa

\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### **High-Precision Flowmeter** (for Sensitive Measurements)

# **MODEL RK1400 SERIES**

This top-grade high precision, float type area flowmeter is a fruit of KOFLOC's challenge to boost the general perception currently conceived by people of flowmeter of being a "mere yardstick" into a new conception that a flowmeter is a "precision instrument." This flowmeter particularly features its uniquely precision-formed glass tube and ultraprecision ball float that ensures accurate measurements of minute flows to medium flows.

#### **Features**

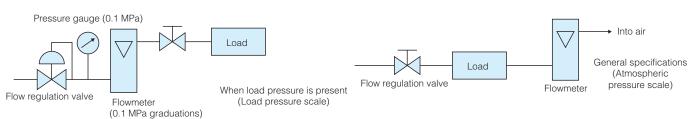
- Capable of measuring ultra-minute flows
- High precision measurement of flows
- Wide variations

#### **Applications**

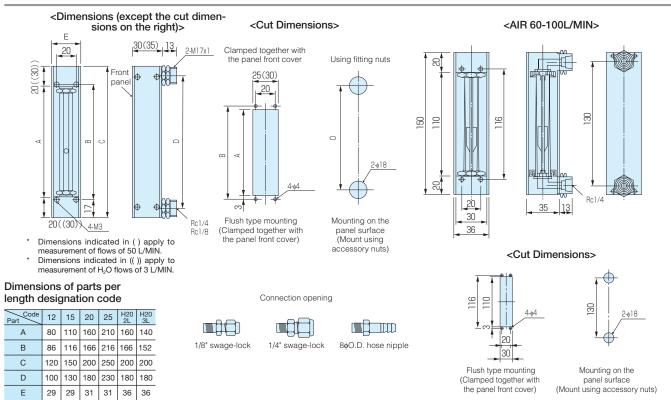
- For integration into your equipment panel
- For flow inspections at laboratory
- For semiconductor manufacturing equipment
- For biotechnology industries



#### **Layout Example with Model RK1400**



#### **Dimensions**



#### **Standard Specifications**

	Gases	Liquids
Fluids	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas) For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used.  * Optional: Scale indicating two types of fluids	Standard fluid: Water For other liquids, consultation is necessary regarding whether conversion conditions or calibration by actual liquid is to be used.
Flow range	0.5-5 ML/MIN to 10-100 L/MIN (See the Capacity Table below.) Optional: 0.5-3 ML/MIN	0.5-5 ML/MIN to 0.3-3 L/MIN (See the Capacity Table below.)  * Optional: 0.5-3 ML/MIN
Accuracy	FS±2% (Measurement point) * Optional: FS±1% (Measurement point)	FS±2% (Measurement point)
	1.0 MPa for 100 ML/MIN or less	1.0 MPa for 5 ML/MIN or less
Proof pressure	0.7 MPa for 5 L/MIN or less	0.7 MPa for 150 ML/MIN or less
	0.5 MPa for 10 L/MIN or more	0.5 MPa for 200 ML/MIN or more
Available scale	10:1 * Optional: 20:1	
Materials	SS	BS*
Body block	SUS316, SUS304	Brass
Tapered tube	Pyrex <sup>©</sup>	, glass
Packing	Viton <sup>®</sup>	NBR
Float	Pyrex, SUS 316, SUS 304 or SUS 303 (for measurem	nent of H <sub>2</sub> O in the flow range of 2-3 L/MIN only), glass
Protective cover	Acryli	c resin
Temperature resistance	MAX	60°C
Connection end	Rc1/4 (Standard)	; Rc1/8 (Optional)

#### **Capacity Table**

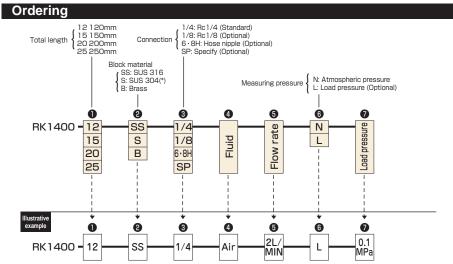
#### Air (Flow rate at atmospheric pressure)

Max. flow r	ate	5	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20	30	50	100
Total length	ML	L/MIN	ML/MIN	L/MIN																	
120mm		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_
150mm		-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200mm		- [	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	_
250mm		- [	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

#### H20

( )

Ì	Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2	3
	Total length	ML/MIN	L/MIN	L/MIN	L/MIN									
	120mm	0	0	0	0	0	0	0	0	0	0	0	_	_
	150mm	0	0	0	0	0	0	0	0	0	0	0	0	_
	200mm	0	0	0	0	0	0	0	0	0	0	0	0	0
ĺ	250mm	0	0	0	0	0	0	0	0	0	0	0	_	_



Note: SUS 304 is for 2-3 L/MIN of water only.

<sup>\*</sup> Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Multiple Flow Meter (for Precision Measurement for Laboratory)

# **MODEL RK140X SERIES**

This multiple flow meter is made by combining several types of flow meter for control of various flows in a laboratory. It is designed based on the RK1400, a high-precision flow meter with high performance. It is recommended to install one unit to facilitate flow measurement in the laboratory.

#### Features

· Multiple measuremens of two to four flow meters

Two to four flow meters can be attached to one unit to permit control of various gases in various flow ranges.

Various flow ranges

The flow meter can measure a variety of flows ranging from the very small flow of full-scale 5 ML/MIN to 20 L/MIN.

• High-precision measurement

This flow meter is provided with a flow meter tube equivalent to that of the precision flow meter RK1400, permitting high-precision measurement at  $\pm 2\%$  F.S.

Stand convenient for measurement

The model has a stand with a level adjuster for convenient use in a laboratory.

- For measurement of multiple components
- · For measurement of multiple ranges
- Flow checker in laboratories



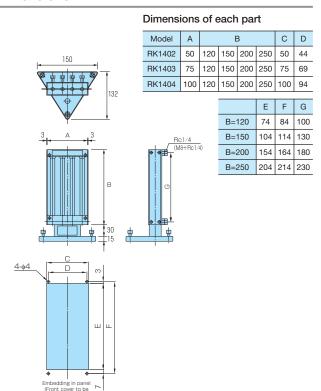
#### **Standard Specifications**

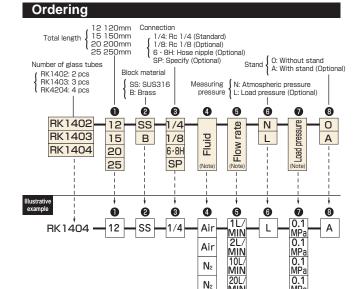
Fluids	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> (Calibration with actual gas) For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used.
Flow range	From 0.5–5 ML/MIN to 2–20 L/MIN (Refer to the Capacity Table on page 65.) * Optional: 0.5–3 ML/MIN
Accuracy	FS ±2% (Measurement point)  * Optional: FS ±1% (Measurement point)
Proof pressure	0.5MPa

Material	SS	BS						
Body block	SUS316	Brass						
Tapered tube	Pyrex <sup>®</sup>							
Packing	Viton <sup>®</sup> * Option (1)	NBR						
Float	Pyrex, SUS316							
Protective cover	Acrylic	c resin						
Temperature resistance	120°C 70°C							
Connection	Rc 1/4 (Standard)	, Rc 1/8 (Optional)						

Option (1): Fluorocarbon resin, Kalrez, Perfluoro, etc.

#### **Dimensions**





(Note) Specify the flow rates in increasing order from the left, as many as the number of glass tubes for (4), (5), and (7).

\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### **High-Precision Flowmeter** (for Sensitive Measurements)

# **MODEL RK1450 SERIES**

This top-grade high-precision area flowmeter is a fruit of KOFLOC's challenge to boost the general perception currently conceived by people of flowmeter of being a "mere yardstick" into a new conception that a flowmeter is a "precision instrument." This flowmeter particularly features its uniquely precision-formed glass tube and ultra-precision ball float.

#### **Features**

#### · Capable of measuring ultra-minute flows

Can measure a wide range of flows from ultra-minute flows of 0.5-3 ML/MIN to flows of 3-30 L/MIN.

#### • High precision measurement

High precision measurement of flows is available up to  $\pm 2\%$  of full scale (standard specification) or to  $\pm 1\%$  of full scale (optional specification).

#### Wide variations

A broad range of variations is available in total length, materials of construction, flow rate, pressure, scale, and so forth to meet diverse applications from a variety of fields.

#### • Capable of measuring all kinds of gases

Practically all kinds of gases can be measured, not to mention those standard (Air,  $N_2$ ,  $O_2$ ,  $H_2$ , He, Ar and  $CO_2$ ).

#### · Measurement of water flows also possible

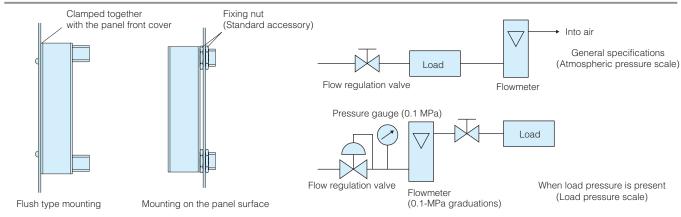
Measurement of full-scale water flows not exceeding 1 L/MIN is also possible. (Dimensions may vary depending upon the specified maximum flow rate.)

#### **Applications**

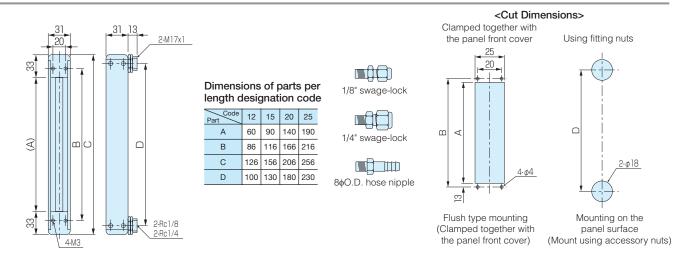
- For integration into your equipment panel
- · For flow inspections at laboratory
- For semiconductor manufacturing equipment
- For biotechnology industries



#### **Layout Example with Model RK1450**



#### **Dimensions**



#### **Standard Specifications**

	Gases	Liquids							
Fluids	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas) For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used. * Optional: Scale indicating two types of fluids	Standard fluid: Water For other liquids, consultation is necessary regarding whether conversion conditions or calibration by actual liquid is to be used.							
Fla	0.5-5 ML/MIN to 3-30 L/MIN (See the Capacity Table below.)	0.5-5 ML/MIN to 0.1-1 L/MIN (See the Capacity Table below.)							
Flow range	* Optional: 0.5-3 ML/MIN	* Optional: 0.5-3 ML/MIN							
Accuracy	FS±2% (Measurement point) * Optional: FS±1% (Measurement point)	FS±2% (Measurement point)							
	1.0 MPa for 100 ML/MIN or less	1.0 MPa for 5 ML/MIN or less							
Proof pressure	0.7 MPa for 5 L/MIN or less	0.7 MPa for 150 ML/MIN or less							
	0.5 MPa for 10 L/MIN or more	0.5 MPa for 200 ML/MIN or more							
Available scale	10:1 * Optional: 20:1								
Materials	SS	BS							
Body block	SUS316	Brass							
Tapered tube	5.5.5.5	, glass							
Packing	Viton®	NBR							
Float	Pyrex, SUS316, glass								
Protective cover	Acryli	c resin							

#### **Capacity Table**

Temperature resistance

Connection end

#### Air (Flow rate at atmospheric pressure)

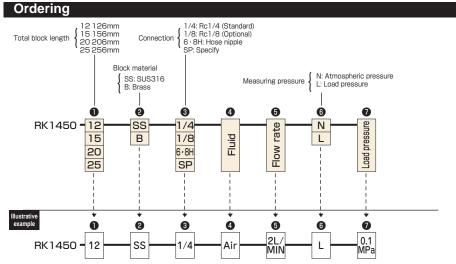
Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20	30
Total length	ML/MIN	L/MIN																
126mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
156mm	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
206mm	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0
256mm	_	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0

MAX60°C

Rc1/4 (Standard); Rc1/8 (Optional)

#### H<sub>2</sub>O

Max. flow rate	5	10	20	30	50	100	150	200	300	500	1
Total length	ML/MIN	L/MIN									
126mm	0	0	0	0	0	0	0	0	0	0	0
156mm	0	0	0	0	0	0	0	0	0	0	0
206mm	0	0	0	0	0	0	0	0	0	0	0
256mm	0	0	0	0	0	0	0	0	0	0	0



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Flowmeter with Bellows Needle Valve (for Low-leak Flow Measurement and Control)

# **MODEL RK1500 SERIES**

The Model RK1500 Series Flowmeter is equipped with a bellows seal type needle valve so that it can withstand high vacuum, high pressure, high temperature and toxic gases.

#### **Features**

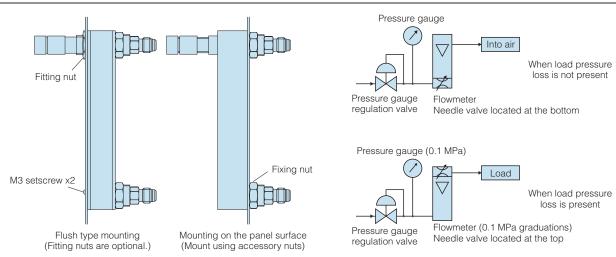
- High reliability against leak is ensured because 100% leak test is conducted before shipping, using a helium leak detector.
- Bellows seal type needle valve perfectly eliminates leak from the valve stem.
- Superior corrosion resistance is ensured by using SUS 316, Viton(tm), fluorocarbon resin and Pyrex glass only for wetted parts and those which are exposed to other fluids.
- Enhanced stability and repeatability are ensured using a flowmeter consisting of a precision-formed try-flat, rib-guided glass tube and a ultra-precision ball float in combination with a sophisticated needle valve.

#### **Applications**

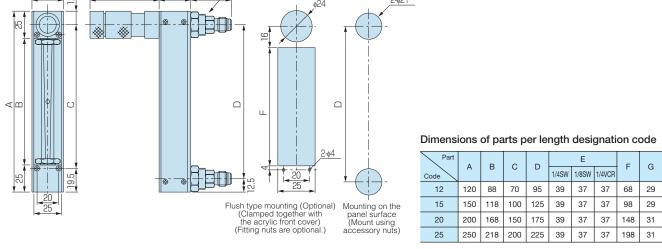
- For vacuum systems
- For semiconductor manufacturing lines



#### Example of use



#### **Dimensions**



<Cut Dimensions>

#### **Standard Specifications**

	Gases	Liquids
Fluids	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas) For other gases, consultation is necessary regarding whether conversion conditions or calibration by actual gas is to be used. * Optional: Scale indicating two types of fluids	Standard fluid: Water For other liquids, consultation is necessary regarding whether conversion conditions or calibration by actual liquid is to be used.
Flow range	0.5-5 ML/MIN to 3-30 L/MIN (See the Capacity Table below.) * Optional: 0.5-3 ML/MIN	0.5-5 ML/MIN to 0.1-1 L/MIN (See the Capacity Table below.) * Optional: 0.5-3 ML/MIN
Accuracy	FS±2% (Measurement point) * Optional: FS±1% (Measurement point)	FS±2% (Measurement point)
	1.0 MPa for 100 ML/MIN or less	1.0 MPa for 5 ML/MIN or less
Proof pressure	0.7 MPa for 5 L/MIN or less	0.7 MPa for 150 ML/MIN or less
	0.5 MPa for 10 L/MIN or more	0.5 MPa for 200 ML/MIN or more
Available scale	10:1 * Optional: 20:1	

Materials	SS					
Body block	SUS316					
Tapered tube Pyrex®, glass						
Packing	Viton®, fluorocarbon resin					
Float	Pyrex, SUS 316, glass					
Protective cover	Acrylic resin					
Temperature resistance	MAX60°C					

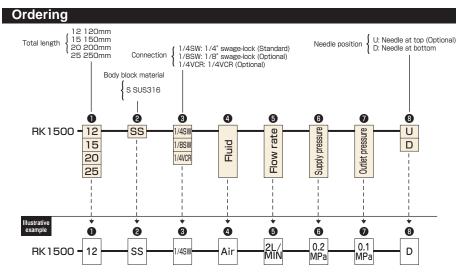
#### **Capacity Table**

#### Air

Max. flow rate	5	10	20	30	50	100	150	200	300	500	1	2	3	5	10	15	20	30
Total length	ML/MIN	L/MIN																
120mm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150mm	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200mm	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250mm	_	_	_	_	_	0	0	0	0	0	0	0	0	0	0	0	0	0

#### H20

	Max. flow rate	5	10	20	30	50	100	150	200	300	500	1
Т	otal length	ML/MIN	L/MIN									
	120mm	0	0	0	0	0	0	0	0	0	0	0
	150mm	0	0	0	0	0	0	0	0	0	0	0
	200mm	0	0	0	0	0	0	0	0	0	0	0
	250mm	0	0	0	0	0	0	0	0	0	0	0



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### Purge Flowmeter with Needle Valve (for Scientific Instrumentation System)

# **MODEL RK1600R SERIES**

The MODEL RK1600R Series Flowmeter is a compact, lightweight model with needle valve designed through our all-out effort at streamlining with the aim of achieving an economical but superior quality flowmeter in accuracy and repeatability, and still more, handy at operation site.

#### **Features**

- Compact design
- Economical
- · Very small in size
- Wide variations

#### **Applications**

- For environmental instrumentation systems
- For general instruments for analysis
- For purge systems
- For semiconductor manufacturing equipment

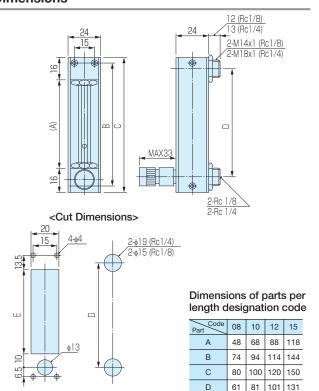


#### **Standard Specifications**

	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas)
Fluids	For other gases, consultation is necessary regarding whether
	conversion conditions or calibration by actual gas is to be used.
Flow range (Full scale)	1L, 2L, 3L, 5L, 10L, 15L, 20L/MIN
Accuracy	FS±5% (Measurement point)
Dunef museums	0.8 MPa for 5 L/MIN or less
Proof pressure	0.5 MPa for 10 L/MIN or more
Available scale	10:1

Materials	S	BS				
Body block and some other components	SUS303, SUS304	Brass				
Tapered tube	Pyrex <sup>®</sup>	, glass				
Packing	Viton <sup>®</sup>	NBR				
Float	Pyrex, SUS316, glass					
Protective cover	Acrylic	c resin				
(Temperature resistance)	MAX	60°C				
Connection	Rc1/8 (Standard); Rc1/4 (Optional)					

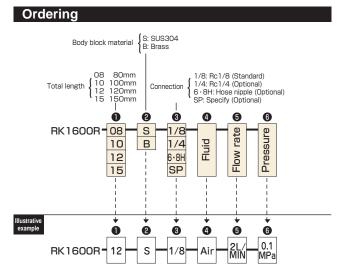
#### **Dimensions**



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64 84 114



\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

Flush type mounting Mounting on the



### Purge Flowmeter with Needle Valve (for Scientific Instrumentation System)

# **MODEL RK1650 SERIES**

This is a completely renewed model of existing KOFLOC RK1600R with sophisticated design to fit sophisticated laboratory or plant equipment.

#### **Features**

#### Compact

A compact flowmeter with variations of total length of 84 mm, 104 mm, 124 mm and 154 mm for choice according to the user's needs

#### Low pressure loss

Pressure loss minimized to allow applications for low supply pressure

#### • Choice of needle valve to suit the user's needs

Four types of needle valve available for your choice according to the requirement of supply pressure

#### Superior stability

All tubes are precision-formed to provide the float with outstanding repeatability and stability.

#### Economical

A flowmeter at quite affordable price achieved through our all-out effort at streamlined design

#### **Applications**

- For environmental instrumentation systems
- For general instruments for analysis
- For purge systems
- For semiconductor manufacturing equipment

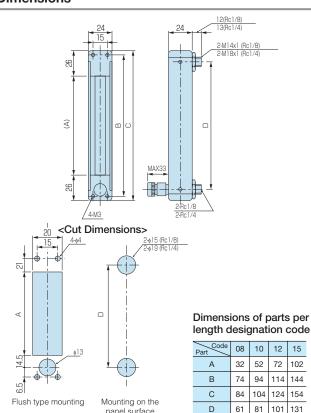


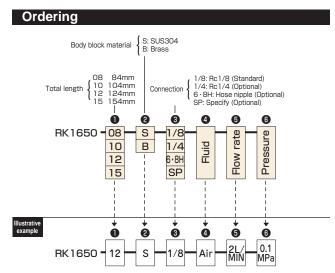
#### **Standard Specifications**

	Air, N <sub>2</sub> , O <sub>2</sub> , H <sub>2</sub> , He, Ar, and CO <sub>2</sub> (Calibration by actual gas)			
Fluids	For other gases, consultation is necessary regarding whether			
	conversion conditions or calibration by actual gas is to be used.			
Flow range (Full scale)	1L, 2L, 3L, 5L, 10L, 15L, 20L/MIN			
Accuracy	FS±5% (Measurement point)			
Dun of munocuus	0.8 MPa for 5 L/MIN or less			
Proof pressure	0.5 MPa for 10 L/MIN or more			
Available scale	10:1			

Materials	S	BS	
Body block and some other components	SUS304, SUS303	Brass	
Tapered tube	Pyrex <sup>®</sup> , glass		
Packing	Viton®	NBR	
Float	Pyrex, SUS316, glass		
Protective cover	Acrylic resin		
(Temperature resistance)	MAX60°C		
Connection	Rc1/8 (Standard); Rc1/4 (Optional)		

#### **Dimensions**





\* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Low-cost Flowmeter (for Immediate Delivery)

# **MODEL RK1700 SERIES**

The Model RK1700 Series Flowmeter centers the focus on cost reduction using SUS 316 as the material of construction. This flowmeter covers flow ranges from 1 L/MIN to 50 L/MIN and can be shipped in one week after the customer's purchase order.

#### **Features**

- Very reduced price
- One-week delivery
- Compact design

#### Notes:

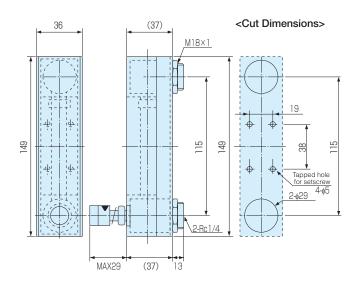
- Operating temperature is 20°C (at atmospheric pressure).
- The needle is located at the bottom. (Standard specification)
- Supply pressure, standard: 0.1 MPa to 0.3 MPa



#### **Standard Specifications**

Flow range (Full scale)	1L, 5L, 10L, 30L, 50L/MIN
riow range (ruii scale)	(AT20°C)
Fluids	Use for Air, N <sub>2</sub> and O <sub>2</sub> exclusively
Accuracy	FS±7%
Available scale	10:1
Proof pressure	0.5MPa
Materials	SS: SUS 316, Pyrex, Viton, SUS 304, SUS 303, glass
Materials	BS: Brass, Pyrex, NBR, SUS303, glass
Connection	Rc1/4

#### **Dimensions**



#### Ordering Connection 1/4: Rc1/4 (Standard) Body block materia Fluid $\begin{cases} Air \\ N_2 \\ O_2 \end{cases}$ S: SUS 316 B: Brass 4 rate Supply pressure Fluid В Ó Ø 0.1 RK1700 ٧ MIN MPa

Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

These are enhanced models of the KOFLOC High Precision Flowmeters RK1200 and RK1400, respectively, by attaching photoswitch sensors for detection of float po-

#### **Features**

Red LEDs are used to visualize projected light spots. Stable and running modes of flows can be checked by pilot lamps.

#### **Standard Specifications**

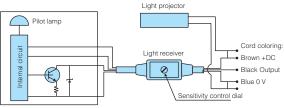
sition and issuance of alarm signals.

	See the specifications for the RK1200/RK1400.		
Rated flow ranges	Measurement of flows below 50 ML/MIN is not		
	available (air at atmospheric pressure condition).		
Setting range	10-90%		
Ambient temperature	5-55°C		

<sup>\*</sup> For other conditions, see the specifications for the RK1200/RK1400.

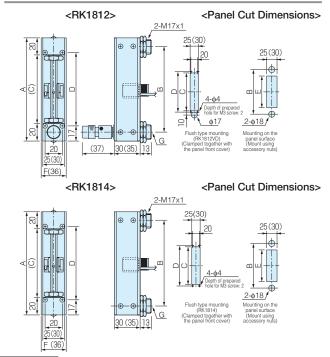
#### **Photosensor Specifications**

Operating power supply	24 VDC±10%		
Power consumption	Light projector: 15 mA or less; Light receiver: 22 mA or less		
Output mode	NPN open collector, sink current: 80 mA (30 VDC) max.		
Running mode	Light on		
Response time	0.5 msec or less		
Cord	Light projector: 0.15 mm² two-core cable (2 m);		
Cord	Light receiver: 0.15 mm <sup>2</sup> three-core cable (2 m)		
Manufacturer	Takenaka electronic industrial co., Ltd.		
Time	UM-T15TV (24 VDC) photoelectric switch containing		
Туре	amplifier with repeater dial on the receiver side		



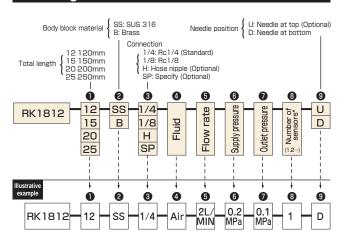
Note: When adjusting the photosensor, first loosen the sensor thumbscrew. The translucent projector is not shown because it is for power input (brown: 24 VDC; blue: 0 V) only. See the photosensor instruction manual enclosed in the package before use.

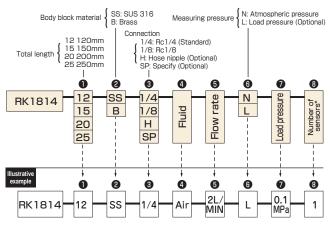
#### **Dimensions**





#### Ordering





- \* If you need two or more sensors, please consult us before placing a purchase order.
- \* Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### **Compact Reed Switch Flow Meter for Alarm Switches**

# MODEL RK1930, RK1935 SERIES

The RK1935 Series has been developed for compact alarm switches. It is a compact flow meter for small equipment panel designs.

#### **Features**

- Compact design
- Applicable to gas and liquid
- With alarm contact
- Low price



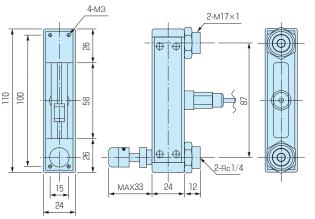
#### **Standard Specifications and Length Designations**

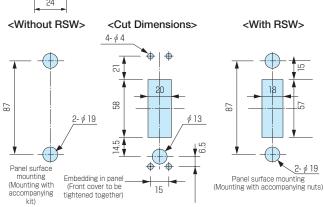
Fluid	H <sub>2</sub> O
Accuracy	FS±5%
Proof pressure	0.5MPa
Material	(S) SUS303, 304, Pyrex®, Viton®, POM, glass (B) Brass, Pyrex®, NBR, POM, glass
Available scale	10:1
Connection	Rc 1/4
Environmental temperature	10-35°C (No condensation)

Fluid	Flow scale (L/MIN)  Alarm setting range (L/MIN)		Method of contact	
	0.1-1.0	0.3-0.7	(A) ON when the reading is above the set value	
H <sub>2</sub> O	0.2-2.0	0.7-1.4	(B) ON when the reading is below the set value	
Contact capacity	100VAC/100VDC 10VAAC/10			

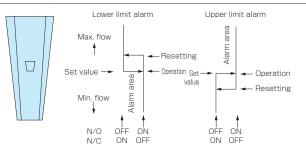
- Models with valve: Differential pressure of 0.2 MPa is necessary for  $H_2O$  1 L/MIN. Models with valve: Differential pressure of 0.3 MPa is necessary for  $H_2O$  2 L/MIN.

#### **Dimensions**

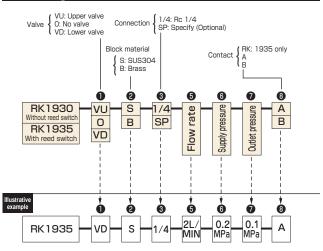




#### <Contact Operation>



#### Ordering



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### **Large Capacity Flow Meter**

# **MODEL RK1950AP SERIES**

Amber tapered tube with secure structure

#### **Features**

- Float receiver functions also as a joint, for secure piping.
- The block tapered tube has an O-ring seal.
- The integral housing protects the tapered tube.
- The tapered tube made of engineering plastic is impact-resistant.



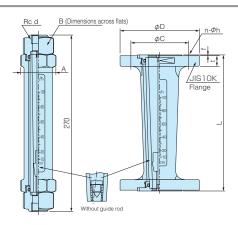
#### **Standard Specifications**

±2%F.S				
120°C				
1 MPa for 40 A or less 0.8 MPa for 50 A or more				
$Bottom \to Top$				
Finish color: Gray (Close to I	Munsell N-6.5)			
Epoxy powder baking	Epoxy powder baking			
JIS10K-RF 10A-100A	Flange only			
RC female thread 3/8-1 inch	ANSI150#RF,DIN			
Material				
SUS304				
NBR				
Polysulfone resin (Transparent amber)				
Ductile cast iron: FCD400				
SUS304				
SUS304				
	120°C  1 MPa for 40 A or less Bottom → Top Finish color: Gray (Close to lepoxy powder baking JIS10K-RF 10A-100A RC female thread 3/8-1 inch Material SUS304 NBR Polysulfone resin (Transpare Ductile cast iron: FCD400 SUS304			

Bore	For water	For air		
10A	1.5-10L/min	120-350L/min		
15A	1.5-15L/min	120-500L/min		
20A	1.5-30L/min	0.2-1m <sup>3</sup> /min		
25A	9-100L/min	0.3-3m³/min		
32A	60-150L/min	2-5m³/min		
40A	90-200L/min	3-6m³/min		
50A	80-300LL/min	2.5-9m³/min		
65A	250-500L/min	8-15m³/min		
80A	250-500L/min	8-15m³/min		
100A	400-900L/min	15-25m³/min		

- Gas (Applicable to N<sub>2</sub>, O<sub>2</sub>, H<sub>2</sub>, Ar, etc.)
- Maximum scale range Threaded type for 10–25 A Flange type for 10–100 A

#### **Dimensions**



Dimensions	OT	eacn	par
			mm

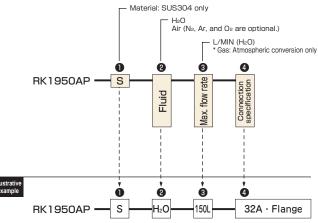
				1111111		
	Bore	d	Α	В		
ĺ	10A	3/8	52	41		
	15A	1/2	52	41		
ĺ	20A	3/4	62	46		
	25A	1	73	41 *		
	* Width across flats					

( )

Dimensions of each part

JIS10kg/cm <sup>2</sup> RF						mm
Bore	L	φD	φC	f	t	n−¢h
10A		90	65	1	14	4-15
15A		95	70	1	16	4-15
20A		100	75	1	18	4-15
25A	220	125	90	1	18	4-19
32A		135	100	2	20	4-19
40A		140	105	2	20	4-19
50A		155	120	2	20	4-19
65A		175	140	2	22	4-19
80A		185	150	2	22	8-19
100A	250	210	175	2	24	8-19

#### Ordering



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

### Reed Switch Flowmeters (for Alarm Switches)

# **MODELS RK1970/RK1975/RK1976 SERIES**

These compact reed switch flowmeters developed centering the focus on cost reduction are for monitoring gas and liquid flows. Any of these models is optimum for process control of cooling water.

#### **Features**

- Low price
- Compact design
- · Compatible with gases and liquids



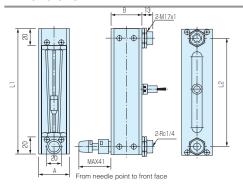
#### **Standard Specifications and Length Designations**

Fluids	H₂O and gases
Accuracy	FS±5%
Proof pressure	0.5 MPa standard
Materials	SUS 316, Pyrex®, Viton®, POM, glass, fluorocarbon resin
Available scale	10: 1
Connection	Rc 1/4
Ambient temperature	10-35°C (No condensation)

Length designation code	H₂O	Air (2)	Contact method
	0.1-1L/MIN	3-30L/MIN	
15	0.3-3L/MIN	10-100L/MIN	(A) Turns on when the flow rises over the set point.
	0.5-5L/MIN	15-150L/MIN	(B) Turn on when the flow goes down over the se
20	0.3-3L/MIN	10-100L/MIN	
	0.5-5L/MIN	15-150L/MIN	
Alarm setting range	20-90% F.S. common for all fluids		
Contact rating	100VAC/100VDC 10VAAC/10WDC		

 $<sup>^{\</sup>star}$  Calibration conditions for the flow ranges above are at 20°C (atmospheric pressure) for air, and at 20°C (0.3 MPa) for H<sub>2</sub>O.

#### **Dimensions**



# 

# Dimensions of parts per length designation code

Code Part	15	20
Α	36	36
В	35	35
L1	150	200
L2	130	180
F	110	160
G	116	166
Н	100	150

<sup>\*</sup> In case of flowmeter with reed switch

#### Ordering VU: Valve at top 1/4: Rc1/4 (Standard) O: Without valve VD: Valve at bottom Connection SP: Specify (Optional) For RK1975/ RK1976 only Body block material Fluid { 1: H<sub>2</sub>O 2: Air 9: Specify Length designation { 15 20 SS: SUS 316 a 8 4 6 A RK1970 W/o Reed SW 1/4 rate Supply pressure Outlet pressure В O 20 SP 2 RK 1975 Reed SW back Flow VD 9 RK1976 0 8 4 6 6 0 8 9 VU S RK 1975 15 MIN

Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### **Acrylic Resin Flow Meter**

# **MODEL RK200 SERIES**

This is a compact lightweight acrylic flow meter. Models with or without a valve are available. The integrated transparent acrylic panel structure permits easy reading of the flow. This model is ideal for air sampling equipment, medical equipment, and analyzers.

#### **Features**

#### • Compact design

The total length is approx. 100 mm, and air can be measured and controlled at the rate of 100 L/MIN.

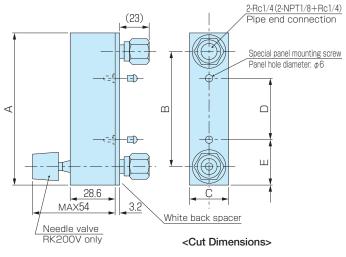
- Low price
- The simple structure keeps the price low.
- Quick delivery

#### **Standard Specifications**

Fluids	Air	
Flow range	0.04-0.5L/MIN	2.5-25L/MIN
	0.1-1L/MIN	5-50L/MIN
	0.4-5L/MIN	10-100L/MIN
	1-10L/MIN	
Accuracy	FS±6%	
Connection	Rc 1/4	
Material	Body	Acrylic resin
	Joint	Brass
	Sealing material	Buna N.
Proof pressure	0.7MPa	
Temperature resistance	65°C (MAX)	

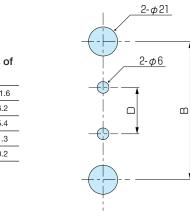


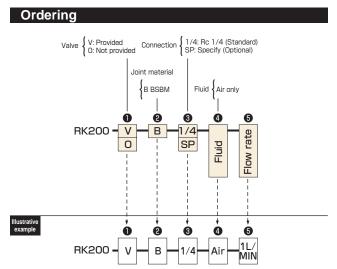
#### **Dimensions**



Dimensions of each part		
Α	101.6	
В	76.2	
С	25.4	
D	41.3	
Е	30.2	

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Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



### **Large Capacity Flowmeters**

# MODELS RK2000/RK2005/RK2006 SERIES

These are large capacity float type flowmeters. Flows within the ranges of 200 to 1,000 L/MIN (for gases) and 10 L/MIN to 30 L/MIN (for liquids) full scale can be measured and controlled.

#### **Features**

- Capable of measuring/controlling large flows of gases in the ranges of 200 to 1,000 L/MIN full scale (Air calibration)
- Capable of measuring/controlling large flows of liquids in the ranges of 10 to 30 L/MIN full scale (Water calibration)
- Low prices
- Can be mounted onto various types of measuring instruments and sampling systems, and in diverse plants.

#### **Standard Specifications and Length Designations**

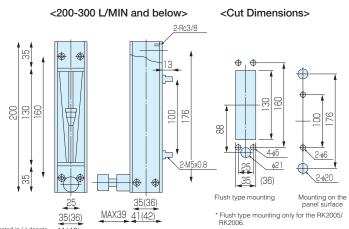
Fluids	Gases and liquids (Calibration conditions for other fluids)	
Accuracy	Within FS±5%	
Proof pressure	0.7MPa	
Materials	S	BS
Body block and some other components	SUS304	Brass
Tapered tube	Pyrex <sup>®</sup> , glass	
Packing	Viton®, fluorocarbon resin	NBR, POM
Float	SUS304	
Protective cover	Acrylic resin	
Temperature resistance	MAX60°C	

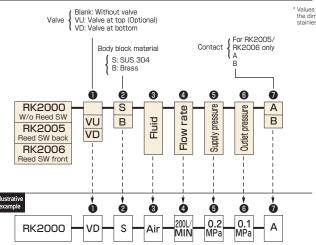
Length designation code	Air (L/MIN)(at atmospheric pressure)	H₂O L/MIN
20	20-200	*1.0-10
Connection	25-250	_
Rc3/8	30-300	_
O.F.	40-400	1.5-15
25 Connection	50-500	*2.0-20
Rc3/4	70-700	*3.0-30
nc3/4	100-1000	_

<sup>\*</sup> The RK2005 and RK2006 are compatible with flow ranges marked with asterisks (\*) only.

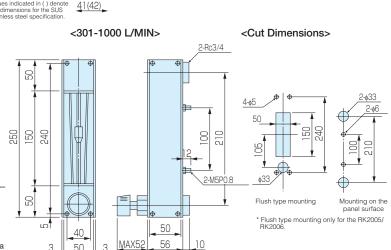


# Dimensions (Based on air flows at 20°C and at atmospheric pressure)





Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.



Ordering

### **Acrylic Resin Flow Meter**

# **MODEL RK400 SERIES**

This acrylic resin flow meter covers a wide flow range. Two types, with and without a valve, are available. The flow meter integral with a transparent acrylic panel permits easy reading, making it ideal for water treatment systems, purge systems, and medical equipment.

#### **Features**

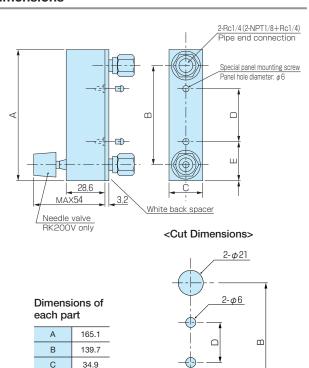
- · A variety of flow ranges
- Selection of desired flow range from a variety of flow ranges
- For measurement of water
- Long flow scales, easy reading of flow, and easy maintenance
- Low price
- Simple structure and low price
- Quick delivery

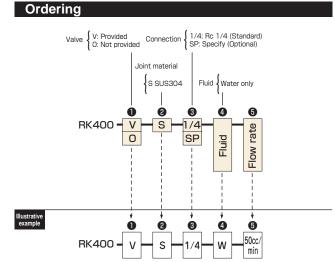
#### **Standard Specifications**

Fluids	WATER		
Flow range	4-50cc/min 10-120cc/min		
	25-225cc/min 40-400cc/min		
	50-650cc/min 100-1,500cc/min		
	200-3,000cc/min 300-3,700cc/min		
Accuracy	FS±6%		
Connection	Rc 1/4		
Material	Body	Acrylic resin	
	Joint	Stainless steel	
	Sealing material	Viton®	
Proof pressure	0.7MPa		
Temperature resistance	65°C (MAX)		



#### **Dimensions**





Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.

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### Precision Flow Meter for Pressure Regulator (for Cylinder Regulator)

# **MODEL RK4400 SERIES**

The KOFLOC RK4400 has been designed specially for connection to precision pressure regulators, and is widely used for cylinder regulators.

#### **Features**

- The precision needle valve Model 2412 is used for easy, fine adjustment of flow.
- The flow meter tube made by high-precision molding ensures excellent stability and repeatability even if it is inclined.
- The material, cleaning method, and assembly are carefully designed for the use of high-purity, high-price standard gases so as to eliminate waste losses, reduce absorption of constituent gas and minimize generation of other types of gas from the parts.
- For cylinder regulators
- For line regulators

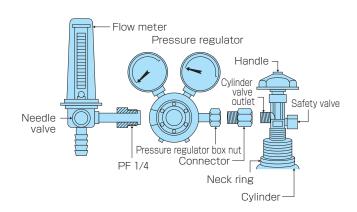
#### **Standard Specifications**

Flow range	Standard 1-10ML/MIN, 5-50ML/MIN 10-100ML/MIN, 50-500ML/MIN 0.1-1L/MIN, 0.5-5L/MIN 1-10L/MIN, 1.5-15L/MIN 2-20L/MIN	
Object gas	Air,N <sub>2</sub> ,O <sub>2</sub> ,H <sub>2</sub> ,He,Ar,CO <sub>2</sub> For other gases, please consult us regarding conversion conditions or calibration with the actual gas to be used. (Refer to page 56.)	
Accuracy	Within FS ±2%	
Repeatability	Within ±0.5% of reading	
Proof pressure	0.3MPa	
Temperature resistance	40°C (MAX)	
Scale	Direct reading or mm scale (Refer to page 57.)	
Needle valve	Precision needle valve Model 2412 equivalent	
Material of exhaust gas section	(B) Pyrex, glass, SUS316, Brass, NBR, acrylic resin, fluorocarbon resin, glass (SS) Pyrex, glass, SUS316, Viton (Teflon), fluorocarbon resin, SUS304, glass	
End connection	Inlet: PF 1/4 thread Outlet: Rc 1/4 (\( \phi \)7 hose nipple) standard accessory	

#### **Purchasing**

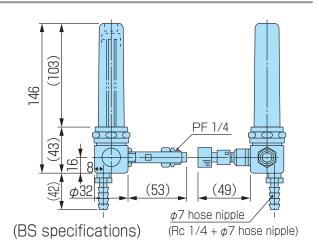
- · Almost all types of general cylinder regulators can be attached. Refer to Model 7700 for a product equipped with a cylinder regulator.
- Our company will select a needle valve. Be sure to clearly indicate the supply pressure (preset pressure of cylinder regulator).

#### **Example of use**

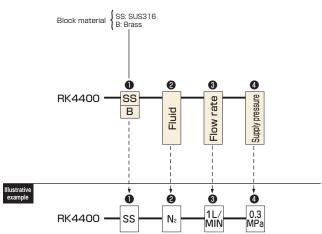




#### **Dimensions**



#### Ordering



Refer to "Ordering" and "Illustrative Example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.