

Overview

100% Customer Satisfaction

MaxiFlo™ KA Series Glass Tube Rotameters are rugged, versatile and accurate variable area (VA) flow meter offering 2.0% full scale accuracy.

It's based on simple and easy-to-understand flow measuring principle but is versatile in the types of fluid it can measure and site conditions, under which it can be installed.

The meter is manufactured to the user's application specifications. So, there's no configuration or calculation required at the time of installation or operation. So, it's simple to install and operate.

The flow rate is indicated by a combination of the index inscribed on the tapered glass tube and the float.

Optionally, it can also output alarm contact signal for low and/or high set points for flow controlling processes.

Various materials can be used for wetted parts. So, the meter can handle almost all liquids and gases that are highly corrosive.

MAXIFLO

Glass Tube Variable-Area Flow Meter (Series KA, KB, KC)

Main Features

Simple Measurement Principle

This is one of the earliest flow meters that came into use. It adopts easy-to-understand and very intuitive principle of variable-area flow meter principle. (Please refer to Operation Principle overleaf)

Simple Design

In its primitive basics, the measuring element is composed of just a tapered tube and a float.

Low Maintenance

Constructed to sustain corrosion, abrasion and shocks, etc., the meter requires minimum maintenance.

No Straight Pipe Requirement

The floatation of the float is not significantly affected by the flow profile. So, there's no requirements for straight pipe either at the upstream or at the downstream

Versatile Construction

The meter can measure all transparent liquids and gases. The meter can have control valve either at the inlet or at the outlet of the meter to control the flow. Not only flange but also thread and sanitary connections are available.

Various Flow Directions

The meter can be configured for Bottom to Top, Bottom to Side, Bottom Side to Top, Bottom Side to Top Side and Bottom Rear to Top Rear, and even side to side.

Alarm Contact Option

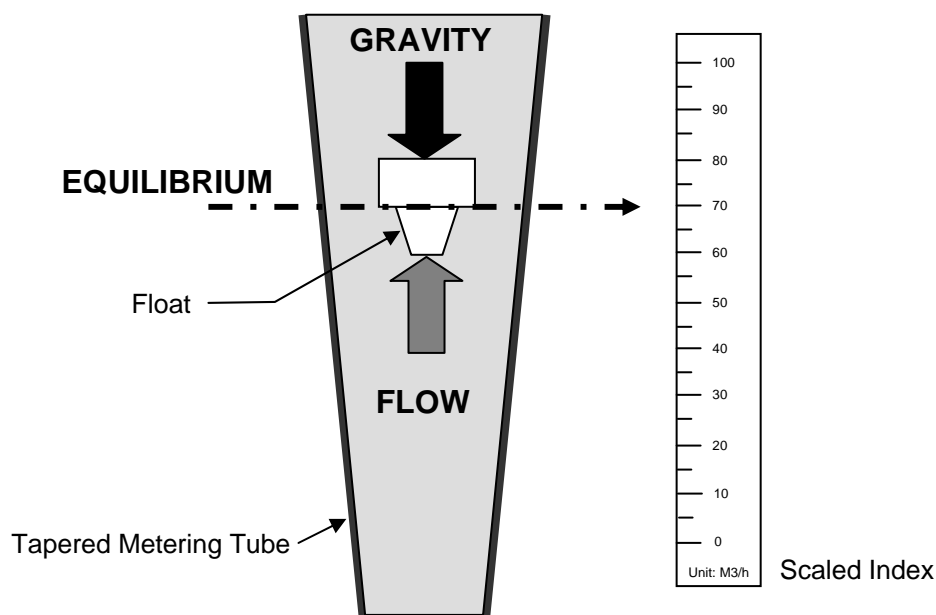
The meter can have alarm contact output for low and/or high flow to meet the process condition of the user.



Operation Principle

Variable-area flow meters, often called rotameters, consist essentially of a tapered tube, a float and scaled indicator as you see in the figure below. Although classified as differential pressure units, they are, in reality, constant differential pressure devices. Flanged-end or screwed-end fittings provide an easy means for installing them in pipes. When there is no flow, the float rests freely at the bottom of the tube. As the fluid enters the bottom of the tube, the float begins to rise. The float material is selected so as to have a density higher than that of the fluid and the position of the float varies directly with the flow rate. Its exact position is at the point where the differential pressure between the upper and the lower surfaces balance the weight of the float.

Because the flow rate can be read directly on a scale mounted next to the tube, no secondary flow-reading devices are necessary. However, if desired, automatic sensing devices can be used to sense the float's level and transmit a flow signal. Rotameter tubes are manufactured from glass, metal, or plastic. Tube diameters vary from 1/4 to greater than 6 in.



Applications

- Hot and cold water as well as air flow measurement in air conditioning
- Medium and large line measurement in general process industry
- Cooling water lines
- Water treatment process
- Pure and ultra-pure water production facilities
- Testing of fire fighting pumps
- Testing of blowers
- Etc.

Model Overview

Model Code	Description	Remarks (Pipe Sizes)
KA	Baseline Glass Tube Variable Area Flow Meter (Rotameter)	15mm (1/2") ~ 100mm (4")
KB	Glass Tube Rotameter without Float Guide Rod	10mm (3/8") ~ 50mm (2")
KC	Glass Tube Rotameter with Orifice Plate at the Inlet	65mm (2-1/2") ~ 200mm (8")
KAS	Short-Form Glass Tube Rotameter	10mm (3/8") ~ 50mm (2")
KASS	Micro-Flow Horizontal Flow Glass Tube Rotameter	10mm (3/8") ~ 50mm (2")

Note: Pipes sizes outside the above ranges are also available. So, please consult us when you have over-size requirement.

Specifications

Item	Specifications	Remarks
Size	10mm (1/2") ~ 200mm (8")	
Media Measured	Liquids and Gases	
Flow Ranges	Liquids: Water Max: ~ 80 m ³ /h Min: 0.03 ~ 0.3 m ³ /h	Normal Condition: 20 °C, 1 atm
	Gases: Air Max: ~ 1000 Nm ³ /h Min: 0.3 ~ 3 Nm ³ /h	
Operating Temperature	- 20 ~ 120 °C	Optionally up to 150 °C
Operating Pressure	Max. 10 KgF/cm ² G for 10mm (3/8") Max. 4 KgF/cm ² G for 100mm (4")	
Process Connections	Flanges: JIS, ANSI, DIN, etc. Screws: NPT, PT, etc. Sanitary Ferrule	
Flow Directions	Bottom to Top, Bottom to Top Side, Bottom Side to Top, Bottom Rear to Top Rear, Side to Side	
Materials	Body & Flange: SS41, SCS13, SCS14, SUS 304, SUS 316, SUS 316L, PVC, Teflon, etc. Float: Stainless Steel, Aluminum, PVC, Teflon, Acetal, etc. Packing: NBR, Viton, EPDM, Teflon, etc.	
Accuracy	± 2% of Full Scale	
Turndown Ratio (Rangeability)	10:1	
Outputs	Alarm Switch Contact	



KA Series Glass Tube Rotameter

This most widely used model is the base line model of our glass tube rotameters that are versatile with many options to choose from.

It's easy to install and maintain. Just place the meter between flanges or screws and tighten the joints and start using. When maintaining, remove the meter and disassemble it by undoing the nuts, clean dirty parts or change out damaged parts for replacement.

The use of hard glass (Pyrex glass) allows for superb mechanical and heat-resistant properties.

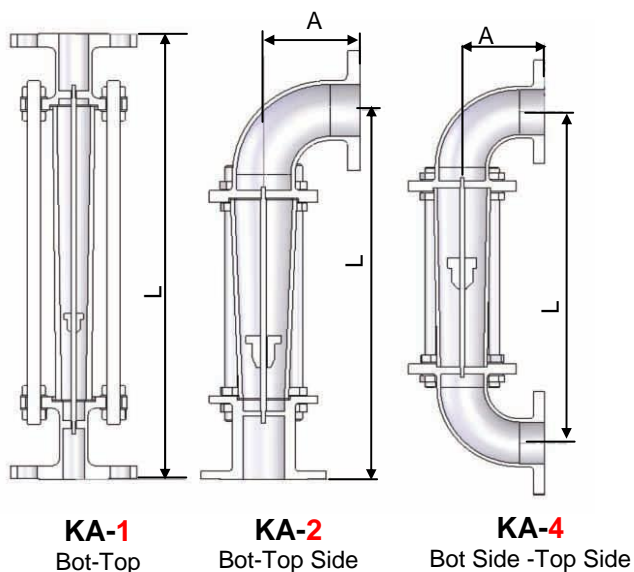
Model Code

Model Selection Guide

KA	Description	Code
Connection	Flange	
	Screw	N
	Sanitary	FS
Flow Direction	Bottom to Top	1
	Bottom to Top Side	2
	Bottom Side to Top	3
	Bottom Side to Top Side	4
	Bottom Rear to Top Rear	5
Material	Cast Iron (SS41)	A
	SUS 304	B
	SUS 316	C
	SUS 316L	D
	Plastic (PVC, PP, PE)	P
	Teflon	T
	Special	X
Options	Teflon-Lining on Wetted Materials	TL
	Electrolytic Polishing	EP
	1-point Alarm Contact (Reed Switch)	R1
	2-point Alarm Contact (Reed Switch)	R2
	1-point Alarm Contact (Fiber Sensor)	E1
	2-point Alarm Contact (Fiber Sensor)	E2
	Needle (<20mm (<3/4"))	NV
	Gate Valve (≥25mm (≥1"))	GV
	Special	X

Flow Directions, Flow Rates, Dimensions and Weights

Flow Directions



Dimensions, Pressures & Weights

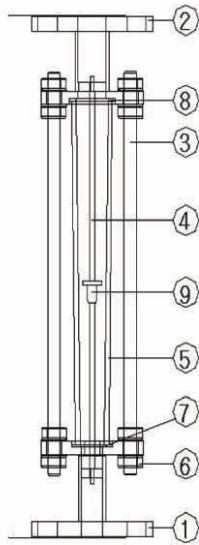
Size, mm	Dimension, mm		Max. Press., KgF/cm2	Weight, Kgs
	L	A		
10 (3/8")	320	60	10	3
15 (1/2")	350	70	10	4
20 (3/4")	350	70	8	5
25 (1")	390	80	8	7
32 (1-1/4")	410	80	7	11
40 (1-1/2")	430	100	6	15
50 (2")	450	120	6	18
65 (2-1/2")	540	140	6	24
80 (3")	745	160	5	36
100 (4")	775	160	4	45

Flow Rates

Size	Water, m ³ /h SUS 304 Float		Gas, Nm ³ /h		Pressure Loss, mmAq	
	Standard	Extended	SUS 304 Float	PVC or Teflon Float	Water	Air
15mm (1/2")	0.1 ~ 1.0	0.03 ~ 0.3	0.5 ~ 5.0	0.3 ~ 3.0	100	20
		0.2 ~ 2.0	2.5 ~ 25	1.2 ~ 12		
20mm (3/4")	0.15 ~ 1.5	0.03 ~ 0.3	0.5 ~ 5.0	0.3 ~ 3.0	200	30
		0.2 ~ 2.0	3.0 ~ 30	2.0 ~ 20		
25mm (1")	0.35 ~ 3.5	0.15 ~ 1.5	1.5 ~ 15	1.0 ~ 10	250	40
		0.5 ~ 5.0	6.0 ~ 60	4.0 ~ 40		
32mm (1-1/4")	0.6 ~ 6	0.3 ~ 3.0	3.0 ~ 30	2.0 ~ 20	300	50
		0.7 ~ 7.0	10 ~ 100	7.0 ~ 70		
40mm (1-1/2")	1.0 ~ 10	0.35 ~ 35	4.5 ~ 45	3.0 ~ 30	350	60
		1.2 ~ 12	15 ~ 150	12 ~ 120		
50mm (2")	1.5	15	0.5 ~ 5.0	5.0	400	100
		2.0 ~ 20	20 ~ 200	15 ~ 150		
65mm (1-1/2")	2.5 ~ 25	1.0 ~ 10	15 ~ 150	10 ~ 100	500	200
		3.0 ~ 30	60 ~ 600	40 ~ 400		
80mm (3")	4.0 ~ 40	2.0 ~ 20	30 ~ 300	20 ~ 200	800	300
		5.0 ~ 50	8 ~ 800	50 ~ 500		
100mm (4")	6.0 ~ 60	3.0 ~ 30	60 ~ 600	30 ~ 300	950	400
		10 ~ 80	150 ~ 1500	100 ~ 1000		

Note: The normal condition for gas flow is 20 °C and 1 atm.

Construction of a Meter



- 1. Bottom Body and Flange
- 2. Top Body and Flange
- 3. Support Bar
- 4. Float Guide Rod
- 5. Glass Tube
- 6. Nut
- 7. Bottom Packing
- 8. Top Packing
- 9. Float

Options

Wett Part Material Options



KA-1-T
(Teflon)



KA-1-P
(PVC)

Connection Options



KAN
(Thread Connection)



KAFS
(Sanitary Connection)

Control Valve Options



KA-1-B-NV
(Needle Valve)

Alarm Output Options



KA-1-B-R1
(1-Point Alarm Contact Reed Switch)



KB Series Glass Tube Rotameter

This model comes without the guide rod that holds the float in its up and down track in KA models.

In consideration of the stabilization of the float movement, the taper angle of the glass tube has been reduced.

It is more adequate for smaller flow applications.

Except for the above, all the other properties of this model including its options are the same as those of KA model.

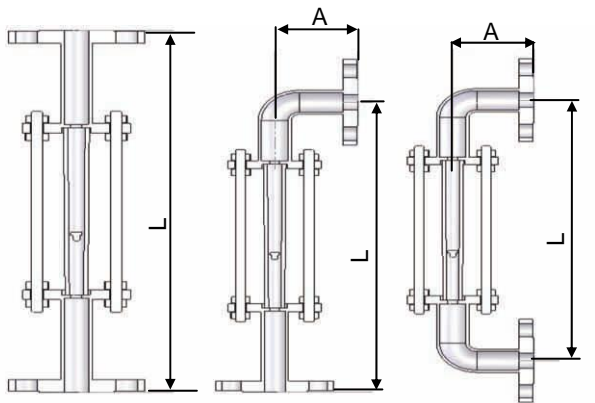
Model Code

Model Selection Guide

KB	Description		Code
Connection	Flange		
	Screw		N
	Sanitary		FS
Flow Direction	Bottom to Top		1
	Bottom to Top Side		2
	Bottom Side to Top		3
	Bottom Side to Top Side		4
	Bottom Rear to Top Rear		5
Material	Cast Iron (SS41)		A
	SUS 304		B
	SUS 316		C
	SUS 316L		D
	Plastic (PVC, PP, PE)		P
	Teflon		T
	Special		X
Options	Teflon-Lining on Wetted Materials		TL
	Electrolytic Polishing		EP
	1-point Alarm Contact (Reed Switch)		R1
	2-point Alarm Contact (Reed Switch)		R2
	1-point Alarm Contact (Fiber Sensor)		E1
	2-point Alarm Contact (Fiber Sensor)		E2
	Gate Valve (<20mm (<3/4"))		GV
	Gate Valve (≥25mm (≥1"))		GV
	Special		X

Flow Rates, Dimensions and Weights

Flow Directions



KB-1
Bot-Top

KB-2
Bot-Top Side

KB-4
Bot Side -Top Side

Dimensions, Pressures & Weights

Size, mm	Dimension, mm		Max. Pres., KgF/cm ²	Weight, Kg
	L	A		
10 (3/8")	300	60	10	2.5
15 (1/2")	350	70	10	3
20 (3/4")	350	70	8	4
25 (1")	390	80	8	6
32 (1-1/4")	410	80	7	10
40 (1-1/2")	430	100	6	13
50 (2")	450	120	6	15

Flow Rates

Size	Water, m ³ /h SUS 304 Float		Gas, Nm ³ /h		Pressure Loss, mmAq	
	Standard	Extended	SUS 304 Float	PVC or Teflon Float	Water	Air
10mm (3/8")	0.006 ~ 0.06	0.003 ~ 0.03	0.006 ~ 0.06	0.01 ~ 0.1	100	20
		0.01 ~ 0.1	0.15 ~ 1.5	0.1 ~ 1.0		
15mm (1/2")	0.02 ~ 0.2	0.01 ~ 0.1	1 ~ 10	0.5 ~ 5.0	100	20
		0.07 ~ 0.7	2.5 ~ 25	1.5 ~ 15		
20mm (3/4")	0.07 ~ 0.7	0.01 ~ 0.1	1.5 ~ 15	0.5 ~ 5.0	200	30
		0.07 ~ 0.7	2.5 ~ 25	2.0 ~ 20		
25mm (1")	0.1 ~ 1.0	0.08 ~ 0.8	2.0 ~ 20	1.2 ~ 12	200	30
		0.12 ~ 1.2	3.5 ~ 35	2.0 ~ 20		
32mm (1-1/4")	0.2 ~ 2.0	0.12 ~ 1.2	2.0 ~ 20	1.5 ~ 15	200	45
		0.2 ~ 2	3.0 ~ 30	2.0 ~ 20		
40mm (1-1/2")	0.3 ~ 3.0	0.2 ~ 2.0	3.0 ~ 30	2.0 ~ 20	280	45
		0.3 ~ 3.0	5.0 ~ 50	3.0 ~ 30		
50mm (2")	0.4 ~ 4.0	0.3 ~ 3.0	5.0 ~ 50	3.0 ~ 30	300	50
		0.45 ~ 4.5	8.0 ~ 80	5.0 ~ 50		

Note: The normal condition for gas flow is 20 °C and 1 atm.



KC Series Glass Tube Rotameter

This model comes without the guide rod that holds the float in its up and down track in KA models.

In consideration of the stabilization of the float movement, the taper angle of the glass tube has been reduced.

It is more adequate for smaller flow applications.

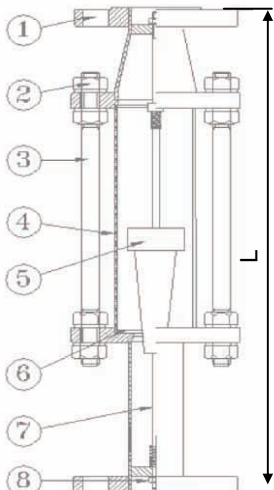
Except for the above, all the other properties of this model including its options are the same as those of KA model.

Model Code

Model Selection Guide

KC	Description		Code
Connection	Flange		
Flow Direction	Bottom to Top		1
Material	SUS 304		B
	SUS 316		C
	SUS 316L		D
	Plastic (PVC, PP, PE)		P
Options	1-point Alarm Contact (Reed Switch)		R1
	2-point Alarm Contact (Reed Switch)		R2
	1-point Alarm Contact (Fiber Sensor)		E1
	2-point Alarm Contact (Fiber Sensor)		E2
	Gate Valve (<20mm (<3/4"))		GV
	Gate Valve (≥25mm (≥1"))		GV
	Special		X

Construction, Flow Rate, Dimension and Weight



- 1. Bottom Body and Flange
- 2. Nut and Washer
- 3. Support Bar
- 4. Glass Tube
- 5. Float
- 6. Packing
- 7. Float Guide Rod
- 8. Orifice Plate

Size (mm)	Flow Rate (m ³ /h)	L (mm)	Weight (Kg)
65mm (1-1/2")	2.5 ~ 25	520	29
80mm (3")	4.0 ~ 40	540	39
100mm (4")	6.0 ~ 60	580	46
125mm (5")	8.0 ~ 80	600	55
150mm (6")	10 ~ 100	640	63
200mm (8")	15 ~ 150	700	76



KAS Series Glass Tube Rotameter

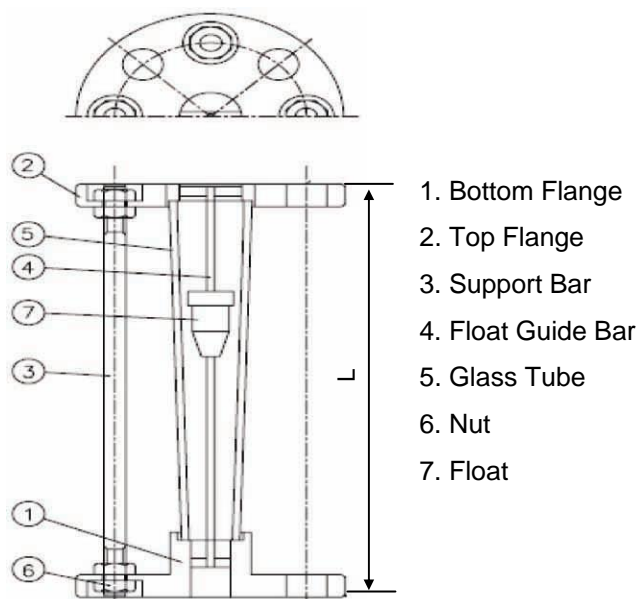
This model is designed for applications where the space for installing the meter is limited. From the base-line model of KA series, body parts at the inlet and the outlet are removed, so the tapered glass tube interfaces with flanges directly.

Model Code

Model Selection Guide			
KAS	Description		Code
Connection	Flange		
Flow Direction	Bottom to Top		1
Material	SUS 304		B
	SUS 316		C
	SUS 316L		D
	Plastic (PVC, PP, PE)		P
	Teflon		T
Options	1-point Alarm Contact (Reed Switch)		R1
	2-point Alarm Contact (Reed Switch)		R2
	1-point Alarm Contact (Fiber Sensor)		E1
	2-point Alarm Contact (Fiber Sensor)		E2
	Gate Valve (<20mm (<3/4"))		GV
	Gate Valve (≥25mm (≥1"))		GV
	Special		X

Flow Rates, Dimensions and Weights

Construction



Dimensions & Weights

Size (mm)	Dimension (mm) L	Weight (Kg)
10 (3/8")	230	3
15 (1/2")	280	5
20 (3/4")	300	6
25 (1")	320	9
32 (1-1/4")	350	12
40 (1-1/2")	370	14
50 (2")	400	16

Flow Rates

Size	Water, m ³ /h SUS 304 Float		Water, m ³ /h PVC Float		Gas, Nm ³ /h Plastic Float
	Standard	Extended	Standard	Extended	Extended
15mm (1/2")	0.1 ~ 1.0	0.03 ~ 0.3	0.08 ~ 0.8	0.05 ~ 0.5	0.3 ~ 3.0
		0.2 ~ 2.0		0.15 ~ 1.5	1.2 ~ 12
20mm (3/4")	0.15 ~ 15	0.03 ~ 0.3	0.12 ~ 1.2	0.05 ~ 0.5	0.3 ~ 3.0
		0.2 ~ 2.0		0.15 ~ 1.5	2.0 ~ 20
25mm (1")	0.35 ~ 3.5	0.15 ~ 1.5	0.25 ~ 2.5	0.1 ~ 1.0	1.0 ~ 10
		0.5 ~ 5.0		0.35 ~ 3.5	4.0 ~ 40
32mm (1-1/4")	0.6 ~ 6.0	0.3 ~ 3.0	0.45 ~ 4.5	0.25 ~ 2.5	2.0 ~ 20
		0.7 ~ 7.0		0.6 ~ 6.0	7.0 ~ 70
40mm (1-1/2")	1.0 ~ 10	0.35 ~ 3.5	0.8 ~ 8.0	0.3 ~ 3.0	3.0 ~ 30
		12 ~ 12		1.0 ~ 10	12 ~ 120
50mm (2")	1.5 ~ 15	1.0 ~ 10	1.2 ~ 12	0.8 ~ 8.0	3.5 ~ 35
		2.0 ~ 20		15 ~ 15	15 ~ 150

Note: The normal condition for gas flow is 20 °C and 1 atm.



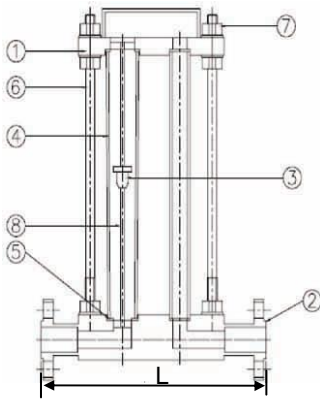
KASS Series Glass Tube Rotameter

This model allows for measurements of horizontal flow of relatively low-flow applications. Horizontal flow is guided upwards through the glass tube to enable measurement of flow and then brought back down to horizontal flow.

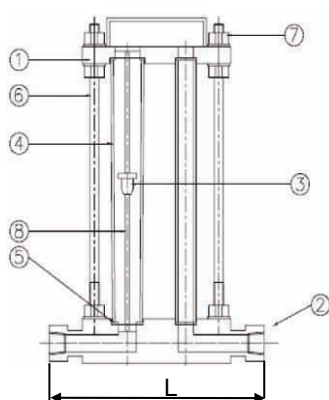
Model Code

Model Selection Guide		
KASS	Description	Code
Connection	Flange	
	Thread	N
	Sanitary	FS
Material	SUS 304	B
	SUS 316	C
	SUS 316L	D
	Plastic (PVC, PP, PE)	P

Construction, Flow Rate, Dimension and Weight



KASS



KASSN

1. Body
2. Flange/Thread
3. Floate
4. Glass Tube
5. Packing
6. Support Bar
7. Nuts and Washer
8. Float Guide Rod

Size (mm)	L (mm)	Weight (Kg)
10mm (3/8")	180	3
15mm (1/2")	220	4
20mm (3/4")	220	5
25mm (1")	250	7
32mm (1-1/4")	250	10
40mm (1-1/2")	280	13
50mm (2")	280	16

Size	Water, m ³ /h SUS 304 Float		Water, m ³ /h PVC Float		Gas, Nm ³ /h Plastic Float	Gas, Nm ³ /h Aluminum, SS304 Float
	Standard	Extended	Standard	Extended		
15mm (1/2")	0.1 ~ 1.0	0.03 ~ 0.3	0.08 ~ 0.8	0.05 ~ 0.5	0.3 ~ 3.0	0.3 ~ 3.0
		0.2 ~ 2.0		0.15 ~ 1.5		
20mm (3/4")	0.15 ~ 15	0.03 ~ 0.3	0.12 ~ 1.2	0.05 ~ 0.5	0.3 ~ 3.0	0.3 ~ 3.0
		0.2 ~ 2.0		0.15 ~ 1.5		
25mm (1")	0.35 ~ 3.5	0.15 ~ 1.5	0.25 ~ 2.5	0.1 ~ 1.0	1.0 ~ 10	1.5 ~ 15
		0.5 ~ 5.0		0.35 ~ 3.5		
32mm (1-1/4")	0.6 ~ 6.0	0.3 ~ 3.0	0.45 ~ 4.5	0.25 ~ 2.5	2.0 ~ 20	3.0 ~ 30
		0.7 ~ 7.0		0.6 ~ 6.0		
40mm (1-1/2")	1.0 ~ 10	0.35 ~ 3.5	0.8 ~ 8.0	0.3 ~ 3.0	3.0 ~ 30	4.5 ~ 45
		12 ~ 12		1.0 ~ 10		
50mm (2")	1.5 ~ 15	1.0 ~ 10	1.2 ~ 12	0.8 ~ 8.0	3.5 ~ 35	5.0 ~ 50
		2.0 ~ 20		15 ~ 15		

Note: The normal condition for gas flow is 20 °C and 1 atm.

We are here for you

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