Overview

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.

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 are 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

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

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

### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
<th>Remarks</th>
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<tbody>
<tr>
<td>Size</td>
<td>10mm (1/2”) ~ 200mm (8”)</td>
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</tr>
<tr>
<td>Media Measured</td>
<td>Liquids and Gases</td>
<td></td>
</tr>
</tbody>
</table>
| Flow Ranges           | Liquids: Water  
Max: ~ 80 m³/h  
Min: 0.03 ~ 0.3 m³/h  
Gases: Air  
Max: ~ 1000 Nm³/h  
Min: 0.3 ~ 3 Nm³/h | Normal Condition:  
20 °C, 1 atm |
| Operating Temperature | - 20 ~ 120 °C | Optionally up to 150 °C |
| Operating Pressure    | Max. 10 KgF/cm²G for 10mm (3/8“)  
Max. 4 KgF/cm²G 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.

<table>
<thead>
<tr>
<th>KA</th>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td>Connection</td>
<td>Flange</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Screw</td>
<td>FS</td>
</tr>
<tr>
<td></td>
<td>Sanitary</td>
<td></td>
</tr>
<tr>
<td>Flow Direction</td>
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<tr>
<td></td>
<td>Bottom to Top Side</td>
<td>2</td>
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<tr>
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<td>Bottom Side to Top</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Bottom Side to Top Side</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Bottom Rear to Top Rear</td>
<td>5</td>
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<tr>
<td>Material</td>
<td>Cast Iron (SS41)</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>SUS 304</td>
<td>B</td>
</tr>
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<td></td>
<td>SUS 316</td>
<td>C</td>
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<td>SUS 316L</td>
<td>D</td>
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<td></td>
<td>Teflon</td>
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</tr>
<tr>
<td>Options</td>
<td>Protect Cover</td>
<td>PC</td>
</tr>
<tr>
<td></td>
<td>1-point Alarm Contact (Reed Switch)</td>
<td>R1</td>
</tr>
<tr>
<td></td>
<td>2-point Alarm Contact (Reed Switch)</td>
<td>R2</td>
</tr>
<tr>
<td></td>
<td>1-point Alarm Contact (Fiber Sensor)</td>
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<tr>
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<td>2-point Alarm Contact (Fiber Sensor)</td>
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<tr>
<td></td>
<td>Needle (&lt;20mm (&lt;3/4&quot;))</td>
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<tr>
<td></td>
<td>Gate Valve (≥25mm (≥1&quot;))</td>
<td>GV</td>
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<td>Special</td>
<td>X</td>
</tr>
</tbody>
</table>
Flow Directions, Flow Rates, Dimensions and Weights

Flow Directions

- KA-1: Bot-Top
- KA-2: Bot-Top Side
- KA-4: Bot Side - Top Side

Dimensions, Pressures & Weights

<table>
<thead>
<tr>
<th>Size, mm</th>
<th>Dimension, mm</th>
<th>Max. Press., KgF/cm²</th>
<th>Weight, Kgs</th>
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<tr>
<td></td>
<td>L</td>
<td>A</td>
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</tr>
<tr>
<td>10 (3/8&quot;)</td>
<td>320</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>15 (1/2&quot;)</td>
<td>350</td>
<td>70</td>
<td>10</td>
</tr>
<tr>
<td>20 (3/4&quot;)</td>
<td>350</td>
<td>70</td>
<td>8</td>
</tr>
<tr>
<td>25 (1&quot;)</td>
<td>390</td>
<td>80</td>
<td>8</td>
</tr>
<tr>
<td>32 (1-1/4&quot;)</td>
<td>410</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>40 (1-1/2&quot;)</td>
<td>430</td>
<td>100</td>
<td>6</td>
</tr>
<tr>
<td>50 (2&quot;)</td>
<td>450</td>
<td>120</td>
<td>6</td>
</tr>
<tr>
<td>65 (2-1/2&quot;)</td>
<td>540</td>
<td>140</td>
<td>6</td>
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<tr>
<td>80 (3&quot;)</td>
<td>745</td>
<td>160</td>
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</tr>
<tr>
<td>100 (4&quot;)</td>
<td>775</td>
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Flow Rates

<table>
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<tr>
<th>Size</th>
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<th>Gas, Nm³/h</th>
<th>Pressure Loss, mmAq</th>
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<tbody>
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<td>Extended</td>
<td>SUS 304 Float</td>
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<tr>
<td>15mm (1/2&quot;)</td>
<td>0.1 ~ 1.0</td>
<td>0.03 ~ 0.3</td>
<td>0.5 ~ 5.0</td>
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<td>0.2 ~ 2.0</td>
<td>2.5 ~ 25</td>
<td>1.2 ~ 12</td>
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<tr>
<td>20mm (3/4&quot;)</td>
<td>0.15 ~ 1.5</td>
<td>0.03 ~ 0.3</td>
<td>0.5 ~ 5.0</td>
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<tr>
<td></td>
<td>0.2 ~ 2.0</td>
<td>3.0 ~ 30</td>
<td>2.0 ~ 20</td>
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<tr>
<td>25mm (1&quot;)</td>
<td>0.35 ~ 3.5</td>
<td>0.15 ~ 1.5</td>
<td>1.5 ~ 15</td>
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<td>0.5 ~ 5.0</td>
<td>6.0 ~ 60</td>
<td>4.0 ~ 40</td>
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<tr>
<td>32mm (1-1/4&quot;)</td>
<td>0.6 ~ 6</td>
<td>0.3 ~ 3.0</td>
<td>3.0 ~ 30</td>
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<td>0.7 ~ 7.0</td>
<td>10 ~ 100</td>
<td>7.0 ~ 70</td>
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<td>40mm (1-1/2&quot;)</td>
<td>1.0 ~ 10</td>
<td>0.35 ~ 35</td>
<td>4.5 ~ 45</td>
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<td>1.2 ~ 12</td>
<td>15 ~ 150</td>
<td>12 ~ 120</td>
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<tr>
<td>50mm (2&quot;)</td>
<td>1.5</td>
<td>15</td>
<td>0.5 ~ 5.0</td>
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<td>2.0 ~ 20</td>
<td>20 ~ 200</td>
<td>15 ~ 150</td>
</tr>
<tr>
<td>65mm (1-1/2)</td>
<td>2.5 ~ 25</td>
<td>1.0 ~ 10</td>
<td>15 ~ 150</td>
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<td>3.0 ~ 30</td>
<td>60 ~ 600</td>
<td>40 ~ 400</td>
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<td>80mm (3&quot;)</td>
<td>4.0 ~ 40</td>
<td>2.0 ~ 20</td>
<td>30 ~ 300</td>
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<td>5.0 ~ 50</td>
<td>8 ~ 800</td>
<td>50 ~ 500</td>
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<td>6.0 ~ 60</td>
<td>3.0 ~ 30</td>
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<td></td>
<td>10 ~ 80</td>
<td>150 ~ 1500</td>
<td>100 ~ 1000</td>
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Note: The normal condition for gas flow is 20 °C and 1 atm.
## KA Series
Glass Tube Rotameters

### Construction of a Meter

<p>| | | | | | | | | |</p>
<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>Bottom Body and Flange</td>
<td>2</td>
<td>Top Body and Flange</td>
<td>3</td>
<td>Support Bar</td>
<td>4</td>
<td>Float Guide Rod</td>
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<td>6</td>
<td>Nut</td>
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<td>Bottom Packing</td>
<td>8</td>
<td>Top Packing</td>
<td>9</td>
<td>Float</td>
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### 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

<table>
<thead>
<tr>
<th>KB</th>
<th>Description</th>
<th>Code</th>
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<tbody>
<tr>
<td><strong>Connection</strong></td>
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<tr>
<td>Flange</td>
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<tr>
<td>Screw</td>
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<td>FS</td>
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<td>Sanitary</td>
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<tr>
<td><strong>Flow Direction</strong></td>
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<td></td>
</tr>
<tr>
<td>Bottom to Top</td>
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<td><strong>Material</strong></td>
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</tr>
<tr>
<td>Cast Iron (SS41)</td>
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</tr>
<tr>
<td>SUS 304</td>
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<td>SUS 316</td>
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<td>SUS 316L</td>
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<td>Teflon</td>
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<td>T</td>
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<tr>
<td><strong>Options</strong></td>
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<tr>
<td>Protect Cover</td>
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<td>PC</td>
</tr>
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<td>1-point Alarm Contact (Reed Switch)</td>
<td></td>
<td>R1</td>
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<td>R2</td>
</tr>
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<td>1-point Alarm Contact (Fiber Sensor)</td>
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<td>E1</td>
</tr>
<tr>
<td>2-point Alarm Contact (Fiber Sensor)</td>
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<td>E2</td>
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<tr>
<td>Gate Valve (&lt;20mm (&lt;3/4&quot;) )</td>
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<td>GV</td>
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<tr>
<td>Gate Valve (≥25mm (≥1&quot;) )</td>
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</tr>
<tr>
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## Flow Rates, Dimensions and Weights

### Flow Rates

<table>
<thead>
<tr>
<th>Size</th>
<th>Water, $m^3/h$ SUS 304 Float</th>
<th>Gas, $Nm^3/h$</th>
<th>Pressure Loss, mmAq</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Extended</td>
<td>SUS 304 Float</td>
</tr>
<tr>
<td>10mm (3/8&quot;)</td>
<td>0.006 ~ 0.06</td>
<td>0.003 ~ 0.03</td>
<td>0.006 ~ 0.06</td>
</tr>
<tr>
<td></td>
<td>0.01 ~ 0.1</td>
<td>0.15 ~ 1.5</td>
<td>0.15 ~ 1.5</td>
</tr>
<tr>
<td>15mm (1/2&quot;)</td>
<td>0.02 ~ 0.2</td>
<td>0.01 ~ 0.1</td>
<td>1 ~ 10</td>
</tr>
<tr>
<td></td>
<td>0.07 ~ 0.7</td>
<td>2.5 ~ 25</td>
<td>2.5 ~ 25</td>
</tr>
<tr>
<td>20mm (3/4&quot;)</td>
<td>0.07 ~ 0.7</td>
<td>0.01 ~ 0.1</td>
<td>1.5 ~ 15</td>
</tr>
<tr>
<td></td>
<td>0.07 ~ 0.7</td>
<td>2.5 ~ 25</td>
<td>2.5 ~ 25</td>
</tr>
<tr>
<td>25mm (1&quot;)</td>
<td>0.1 ~ 1.0</td>
<td>0.08 ~ 0.8</td>
<td>2.0 ~ 20</td>
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<td></td>
<td>0.12 ~ 1.2</td>
<td>3.5 ~ 35</td>
<td>3.5 ~ 35</td>
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<td>32mm (1-1/4&quot;)</td>
<td>0.2 ~ 2.0</td>
<td>0.12 ~ 1.2</td>
<td>2.0 ~ 20</td>
</tr>
<tr>
<td></td>
<td>0.2 ~ 2</td>
<td>3.0 ~ 30</td>
<td>3.0 ~ 30</td>
</tr>
<tr>
<td>40mm (1-1/2&quot;)</td>
<td>0.3 ~ 3.0</td>
<td>0.2 ~ 2.0</td>
<td>3.0 ~ 30</td>
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<td>0.3 ~ 3</td>
<td>5.0 ~ 50</td>
<td>5.0 ~ 50</td>
</tr>
<tr>
<td>50mm (2&quot;)</td>
<td>0.4 ~ 4.0</td>
<td>0.3 ~ 3.0</td>
<td>5.0 ~ 50</td>
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<tr>
<td></td>
<td>0.45 ~ 4.5</td>
<td>8.0 ~ 80</td>
<td>8.0 ~ 80</td>
</tr>
</tbody>
</table>

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

### Dimensions, Pressures & Weights

<table>
<thead>
<tr>
<th>Size, mm</th>
<th>Dimension, mm</th>
<th>Max. Pres., KgF/cm²</th>
<th>Weight, Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (3/8&quot;)</td>
<td>300 ~ 60</td>
<td>10</td>
<td>2.5</td>
</tr>
<tr>
<td>15 (1/2&quot;)</td>
<td>350 ~ 70</td>
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<td>20 (3/4&quot;)</td>
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<td>4</td>
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<td>25 (1&quot;)</td>
<td>390 ~ 80</td>
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<td>6</td>
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<td>32 (1-1/4&quot;)</td>
<td>410 ~ 80</td>
<td>7</td>
<td>10</td>
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<tr>
<td>40 (1-1/2&quot;)</td>
<td>430 ~ 100</td>
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<tr>
<td>50 (2&quot;)</td>
<td>450 ~ 120</td>
<td>6</td>
<td>15</td>
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### Flow Directions

- **KB-1**: Bot-Top
- **KB-2**: Bot-Top Side
- **KB-4**: Bot Side - Top Side

**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

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

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

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Flow Rate (m³/h)</th>
<th>L (mm)</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>65mm (1-1/2”)</td>
<td>2.5 ~ 25</td>
<td>520</td>
<td>29</td>
</tr>
<tr>
<td>80mm (3”)</td>
<td>4.0 ~ 40</td>
<td>540</td>
<td>39</td>
</tr>
<tr>
<td>100mm (4”)</td>
<td>6.0 ~ 60</td>
<td>580</td>
<td>46</td>
</tr>
<tr>
<td>125mm (5”)</td>
<td>8.0 ~ 80</td>
<td>600</td>
<td>55</td>
</tr>
<tr>
<td>150mm (6”)</td>
<td>10 ~ 100</td>
<td>640</td>
<td>63</td>
</tr>
<tr>
<td>200mm (8”)</td>
<td>15 ~ 150</td>
<td>700</td>
<td>76</td>
</tr>
</tbody>
</table>
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 KAS series, body parts at the inlet and the outlet are removed, so the tapered glass tube interfaces with flanges directly.

### Model Code

<table>
<thead>
<tr>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flange</td>
<td></td>
</tr>
<tr>
<td>Bottom to Top</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SUS 304</td>
<td>B</td>
</tr>
<tr>
<td>SUS 316</td>
<td>C</td>
</tr>
<tr>
<td>SUS 316L</td>
<td>D</td>
</tr>
<tr>
<td>Plastic (PVC, PP, PE)</td>
<td>P</td>
</tr>
<tr>
<td>Teflon</td>
<td>T</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Options</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1-point Alarm Contact (Reed Switch)</td>
<td>R1</td>
</tr>
<tr>
<td>2-point Alarm Contact (Reed Switch)</td>
<td>R2</td>
</tr>
<tr>
<td>1-point Alarm Contact (Fiber Sensor)</td>
<td>E1</td>
</tr>
<tr>
<td>2-point Alarm Contact (Fiber Sensor)</td>
<td>E2</td>
</tr>
<tr>
<td>Gate Valve (&lt;20mm (&lt;3/4&quot;))</td>
<td>GV</td>
</tr>
<tr>
<td>Gate Valve (≥25mm (≥1&quot;))</td>
<td>GV</td>
</tr>
<tr>
<td>Special</td>
<td>X</td>
</tr>
</tbody>
</table>
# Flow Rates, Dimensions and Weights

## Construction

1. Bottom Flange
2. Top Flange
3. Support Bar
4. Float Guide Bar
5. Glass Tube
6. Nut
7. Float

## Dimensions & Weights

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Dimension (mm) L</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (3/8&quot;)</td>
<td>230</td>
<td>3</td>
</tr>
<tr>
<td>15 (1/2&quot;)</td>
<td>280</td>
<td>5</td>
</tr>
<tr>
<td>20 (3/4&quot;)</td>
<td>300</td>
<td>6</td>
</tr>
<tr>
<td>25 (1&quot;)</td>
<td>320</td>
<td>9</td>
</tr>
<tr>
<td>32 (1-1/4&quot;)</td>
<td>350</td>
<td>12</td>
</tr>
<tr>
<td>40 (1-1/2&quot;)</td>
<td>370</td>
<td>14</td>
</tr>
<tr>
<td>50 (2&quot;)</td>
<td>400</td>
<td>16</td>
</tr>
</tbody>
</table>

## Flow Rates

<table>
<thead>
<tr>
<th>Size</th>
<th>Water, m³/h SUS 304 Float</th>
<th>Water, m³/h PVC Float</th>
<th>Gas, Nm³/h Plastic Float</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Extended</td>
<td>Standard</td>
</tr>
<tr>
<td>15mm (1/2&quot;)</td>
<td>0.1 ~ 1.0</td>
<td>0.03 ~ 0.3</td>
<td>0.08 ~ 0.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 ~ 2.0</td>
<td></td>
</tr>
<tr>
<td>20mm (3/4&quot;)</td>
<td>0.15 ~ 15</td>
<td>0.03 ~ 0.3</td>
<td>0.12 ~ 1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.2 ~ 2.0</td>
<td></td>
</tr>
<tr>
<td>25mm (1&quot;)</td>
<td>0.35 ~ 3.5</td>
<td>0.15 ~ 1.5</td>
<td>0.25 ~ 2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ~ 5.0</td>
<td></td>
</tr>
<tr>
<td>32mm (1-1/4&quot;)</td>
<td>0.6 ~ 6.0</td>
<td>0.3 ~ 3.0</td>
<td>0.45 ~ 4.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.7 ~ 7.0</td>
<td></td>
</tr>
<tr>
<td>40mm (1-1/2&quot;)</td>
<td>1.0 ~ 10</td>
<td>0.35 ~ 3.5</td>
<td>0.8 ~ 8.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 ~ 12</td>
<td></td>
</tr>
<tr>
<td>50mm (2&quot;)</td>
<td>1.5 ~ 15</td>
<td>1.0 ~ 10</td>
<td>1.2 ~ 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0 ~ 20</td>
<td></td>
</tr>
</tbody>
</table>

Note: The normal condition for gas flow is 20 ℃ 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

<table>
<thead>
<tr>
<th>KASS</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Flange</td>
<td>N</td>
</tr>
<tr>
<td>Thread</td>
<td></td>
<td>FS</td>
</tr>
<tr>
<td>Material</td>
<td>SUS 304</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>SUS 316</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>SUS 316L</td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>Plastic (PVC, PP, PE)</td>
<td>P</td>
</tr>
</tbody>
</table>

### Construction, Flow Rate, Dimension and Weight

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

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>L (mm)</th>
<th>Weight (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10mm (3/8&quot;)</td>
<td>180</td>
<td>3</td>
</tr>
<tr>
<td>15mm (1/2&quot;)</td>
<td>220</td>
<td>4</td>
</tr>
<tr>
<td>20mm (3/4&quot;)</td>
<td>220</td>
<td>5</td>
</tr>
<tr>
<td>25mm (1&quot;)</td>
<td>250</td>
<td>7</td>
</tr>
<tr>
<td>32mm (1-1/4&quot;)</td>
<td>250</td>
<td>10</td>
</tr>
<tr>
<td>40mm (1-1/2&quot;)</td>
<td>280</td>
<td>13</td>
</tr>
<tr>
<td>50mm (2&quot;)</td>
<td>280</td>
<td>16</td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Size (mm)</th>
<th>Water, m³/h SUS 304 Float</th>
<th>Water, m³/h PVC Float</th>
<th>Gas, Nm³/h Plastic Float</th>
<th>Gas, Nm³/h Aluminum, SS304 Float</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Extended</td>
<td>Standard</td>
<td>Extended</td>
</tr>
<tr>
<td>15mm (1/2&quot;)</td>
<td>0.1 ~ 1.0</td>
<td>0.03 ~ 0.3</td>
<td>0.08 ~ 0.8</td>
<td>0.05 ~ 0.5</td>
</tr>
<tr>
<td></td>
<td>0.2 ~ 2.0</td>
<td>0.15 ~ 1.5</td>
<td>1.2 ~ 12</td>
<td>2.0 ~ 20</td>
</tr>
<tr>
<td>20mm (3/4&quot;)</td>
<td>0.15 ~ 15</td>
<td>0.03 ~ 0.3</td>
<td>0.12 ~ 1.2</td>
<td>0.05 ~ 0.5</td>
</tr>
<tr>
<td></td>
<td>0.2 ~ 2.0</td>
<td>0.15 ~ 1.5</td>
<td>2.0 ~ 20</td>
<td>3.0 ~ 30</td>
</tr>
<tr>
<td>25mm (1&quot;)</td>
<td>0.35 ~ 3.5</td>
<td>0.15 ~ 1.5</td>
<td>0.25 ~ 2.5</td>
<td>0.1 ~ 1.0</td>
</tr>
<tr>
<td></td>
<td>0.5 ~ 5.0</td>
<td>0.35 ~ 3.5</td>
<td>4.0 ~ 40</td>
<td>6.0 ~ 60</td>
</tr>
<tr>
<td>32mm (1-1/4&quot;)</td>
<td>0.6 ~ 6.0</td>
<td>0.3 ~ 3.0</td>
<td>0.45 ~ 4.5</td>
<td>0.25 ~ 2.5</td>
</tr>
<tr>
<td></td>
<td>0.7 ~ 7.0</td>
<td>0.6 ~ 6.0</td>
<td>7.0 ~ 70</td>
<td>10 ~ 100</td>
</tr>
<tr>
<td>40mm (1-1/2&quot;)</td>
<td>1.0 ~ 10</td>
<td>0.35 ~ 3.5</td>
<td>0.8 ~ 8.0</td>
<td>0.3 ~ 3.0</td>
</tr>
<tr>
<td></td>
<td>12 ~ 12</td>
<td>1.0 ~ 10</td>
<td>12 ~ 120</td>
<td>15 ~ 150</td>
</tr>
<tr>
<td>50mm (2&quot;)</td>
<td>1.5 ~ 15</td>
<td>1.0 ~ 10</td>
<td>1.2 ~ 12</td>
<td>0.8 ~ 8.0</td>
</tr>
<tr>
<td></td>
<td>2.0 ~ 20</td>
<td>15 ~ 15</td>
<td>15 ~ 150</td>
<td>20 ~ 200</td>
</tr>
</tbody>
</table>

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