

■ GENERAL

R-100 is a glass tube type variable area flowmeter. The flow rate is indicated by the position of float and the graduation engraved on the glass tube.

Although it has a very simple construction, it is widely used for measurement of flow rate of liquids and gases in various applications thanks to its high reliability and easy handling capability.

R-700 series having alarm contact are also available. (Refer to separate TECHNICAL GUIDANCE for details.)

■ FEATURES

❑ DIRECT OBSERVATION OF FLUID

In addition to flow rate measurement, direct observation of fluid can be done through glass tube. This is effective for quality control of process line.

❑ COST EFFECTIVENESS

This is the most cost effective device for local flow measurement. Very widely used for various applications.

❑ EASY INSTALLATION

No adjustment is required after installation. No straight run for upstream and downstream is needed. This results easy piping design.

❑ EASY MAINTENANCE

Very simple construction offers almost "NO MAINTENANCE LOAD".

❑ PURE MECHANICAL CONSTRUCTION

Flow rate is measured by pure mechanical action and no utility supply such as electric, air...required.



■ MODEL CODE

| R-10 | | - | Description |
|----------------|---|----------|----------------------|
| Flow Direction | 1 | | BOTTOM→TOP |
| | 2 | | BOTTOM→TOP SIDE |
| | 3 | | BOTTOM SIDE→TOP SIDE |
| | 4 | | BOTTOM SIDE→TOP |
| | 5 | | BOTTOM REAR→TOP REAR |
| Options | | R | RIBBED TAPERED TUBE |
| | | V | FLOW ADJUSTING VALVE |

STANDARD MATERIAL PRODUCTS

OUTLINE

In STANDARD MATERIAL PRODUCTS, the fluid contacting body material is cast iron and stainless steel. They are widely used for measurement of water, air and other "Not-so-corrosive" fluids.

STANDARD SPECIFICATION

- Measuring fluid: All kinds of liquids and gases (Not suitable for steam measurement. AM series Metal Tube Flowmeters are recommended.)
- Available size (Meter size): 10 to 100
- Process connection:
 - Standard: JIS 10K flange
 - Option: ANSI, DIN, other flanges
 - Rc, NPT (up to 25mm)

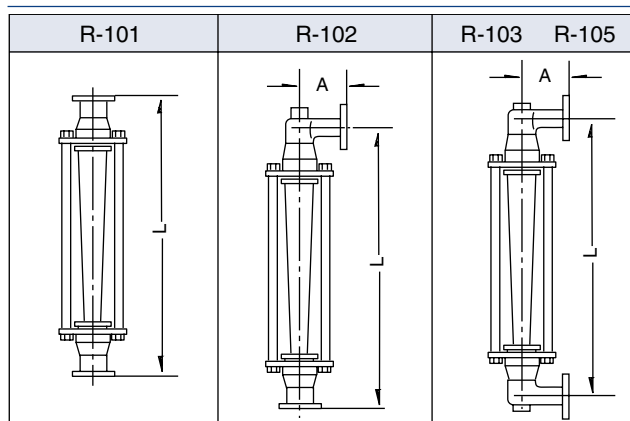
Fluid pressure

| Meter size | Max. Fluid press. (MPa) | Meter size | Max. Fluid press. (MPa) |
|------------|-------------------------|------------|-------------------------|
| 10 | 1.2 | 50 | 0.6 |
| 15 | 1.0 | 65 | 0.6 |
| 20 | 0.8 | 80 | 0.4 |
| 25 | 0.8 | 100 | 0.4 |
| 40 | 0.6 | | |

- Max. thermal shock: 80°C
- Indication accuracy:
 - Stainless steel float: ±1.5%F.S.
 - Resin float: ±2.5%F.S.
- Range ability: 10:1 (±3% F.S. for liquids with QW of 50 L/h or lower, and gases with QN of 1.5 m³/h (nor) or lower)
- Available material:
 - Fittings: Cast iron, SUS304, SUS316, SUS316L
 - Tapered tube: Heat-resistant glass (Acryl tapered tube is available on request.)
 - Float: For liquids: SUS304, SUS316, SUS316L, PVC, Others; For gases: Aluminium, PVC, PTFE, SUS304, Others
 - Float rod: SUS304, SUS316, SUS316L, Others (The meters for gases with 20 or more in meter size and ones for liquids with 40 or more have the float rods)
 - Packing: NBR, FPM, Others
- Paint: Munsell 7.5BG 4/1.5 (The parts made of stainless steel is not painted.)
- Fluid temp: Select the temperature for the material in the following table in the operating temperature limit.



DIMENSION



| Meter size | Dimension | |
|------------|-----------|--------|
| | L (mm) | A (mm) |
| 10 | 420 | 75 |
| 15 | 420 | 75 |
| 20 | 430 | 100 |
| 25 | 500 | 100 |
| 40(1)* | 500 | 100 |
| 40(2)* | 500 | 120 |
| 50 | 530 | 120 |
| 65 | 530 | 140 |
| 80 | 570 | 140 |
| 100 | 590 | 160 |

* Refer to the flow rating by size in the next page.

PRODUCT MASS

| Meter size | Mass (approx.) kg | Meter size | Mass (approx.) kg |
|------------|-------------------|------------|-------------------|
| 10 | 3 | 50 | 18 |
| 15 | 4 | 65 | 22 |
| 20 | 5 | 80 | 29 |
| 25 | 8 | 100 | 41 |
| 40 | 14 | | |

Above table shows the approximate mass of R-101 made of metal.

| Parts name | Material | Operating temperature limit (°C) | | | | | |
|--------------|----------------------|----------------------------------|----|----|----|----|-----|
| | | 0 | 50 | 60 | 70 | 80 | 120 |
| Tapered tube | Heat-resistant glass | | | | | | |
| | Acrylic | | | | | | |
| Float | Metal | | | | | | |
| | PTFE | | | | | | |
| | PVC | | | | | | |
| Packing | NBR | | | | | | |
| | EPDM | | | | | | |

It is general data, and the maximum temperature may change by terms of use and environment.

■ CAPACITY RATING

☐ For liquid measurement

| Meter size | Water flow [L/h] | | | |
|------------|-----------------------|-----------------|-----------------------|-----------------|
| | Glass tapered tube | | Acryl tapered tube | |
| | Stainless steel float | PVC, PTFE float | Stainless steel float | PVC, PTFE float |
| 10 | 9 to 120 | 30 to 55 | 70 to 120 | 30 to 55 |
| 15 | 410 | 230 | 400 | 230 |
| 20 | 1040 | 700 | 1000 | 700 |
| 25 | 1750 | 1150 | 1600 | 1100 |
| 40 (1) | 2500 | 1900 | 2500 | 1800 |
| 40 (2) | 4400 | 3300 | 4200 | 3200 |
| 50 | 9100 | 6800 | 9000 | 6800 |
| 65 | 12100 | 9500 | 12000 | 9200 |
| 80 | 21000 | 16000 | Not available | Not available |
| 100 | 52000 | 42800 | Not available | Not available |

☐ For gas measurement

| Meter size | Air flow [m³/h (nor)] | | | | |
|------------|-----------------------|----------------|-------------|-----------------------|----------------|
| | Glass tapered tube | | | Acryl tapered tube | |
| | Stainless steel float | Aluminum float | PTFE float | Stainless steel float | Aluminum float |
| 10 | Not available | 0.18 to 1.7 | 0.15 to 1.4 | Not available | 0.18 to 1.7 |
| 15 | Not available | 6 | 5.6 | Not available | 6 |
| 20 | 12 to 30 | 18 | 15 | 12 to 30 | 18 |
| 25 | 54 | 30 | 25 | 50 | 29 |
| 40 (1) | 75 | 40 | 36 | 75 | 40 |
| 40 (2) | 135 | 80 | 72 | 130 | 75 |
| 50 | 270 | 150 | 135 | 270 | 150 |
| 65 | 350 | 210 | 190 | 350 | 210 |
| 80 | Not available | 350 | 430 | Not available | Not available |
| 100 | Not available | 820 | 1000 | Not available | Not available |

■ FLOW RATE COMPENSATION CALCULATION

In this TECHNICAL GUIDANCE flow rate tables are indicated by flow rate of water (Density 1.0g/cm³, Viscosity 1.0mPa·s) and by flow rate of air (0°C, 1 atm). Thus, in case the actual operating condition differs from them, the following compensation calculation is required to obtain flow rate in such condition and then, tables are referred for size selection.

☐ Liquid measurement applications

$$C\gamma = \sqrt{\frac{\gamma_o(\gamma_f - \gamma)}{\gamma(\gamma_f - \gamma_o)}}$$

$C\gamma$: Conversion coefficient
 γ_o : Density of liquid to be measured (g/cm³)
 γ : Density of water (g/cm³)
 γ_f : Density of float (g/cm³)
 (Refer to Float density table below)

| | | | |
|-----------------------------------|------|----------------------------------|------|
| SUS304, SUS316 | 7.9 | MA-B (Equivalent to Hastelloy B) | 9.24 |
| MA276 (Equivalent to Hastelloy C) | 8.94 | Titanium | 4.5 |

Calculation example

$$Q_w = Q_A \times C\gamma$$

$$= 1000 \times \sqrt{\frac{\gamma_o(\gamma_f - \gamma)}{\gamma(\gamma_f - \gamma_o)}}$$

$$= 1000 \times \sqrt{\frac{1.4(7.9 - 1)}{1(7.9 - 1.4)}}$$

$$= 1000 \times 1.219 = 1219 \text{ L/h}$$

Density of liquid 1.4g/cm³
 SUS316 float (7.9g/cm³),
 full scale 1000 L/h
 Q_A : Flow rate of actual Liquid
 Q_w : Water converted flow rate

☐ Gas measurement application

$$Q_N = Q_{NO} \times \sqrt{\frac{\gamma_{NO}}{\gamma_N}} \times \sqrt{\frac{P_N}{P_o}} \times \sqrt{\frac{T_o}{T_N}}$$

Q_N : Air converted flow rate [m³/h (nor)]
 Q_{NO} : Flow rate of actual gas [m³/h (nor)]
 γ_{NO} : Density of gas to be measured [kg/m³ (nor)]
 γ_N : Density of AIR to be measured [1.293kg/m³ (nor)]
 P_o : Operating Press. [0.1013+Op.press(Gauge)] [MPa abs]
 P_N : Design Press. [0.1013MPa abs]
 T_o : Operating temp. [273+Op.temp(°C)] [K]
 T_N : Design temp. 273 [K]

Calculation example

CO₂ gas 1.977kg/m³ (nor), Op.press. 0.5MPa, Op.temp. 40°C, Full scale 100m³/h (nor)

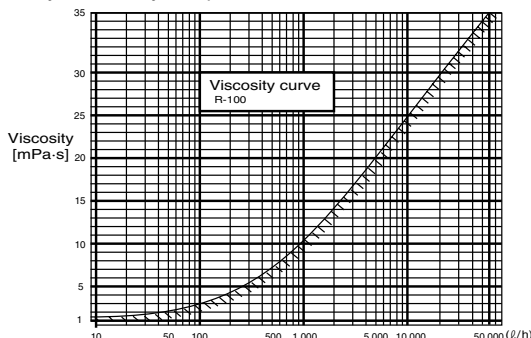
$$Q_N = 100 \times \sqrt{\frac{1.977}{1.293}} \times \sqrt{\frac{0.1013}{0.1013+0.5}} \times \sqrt{\frac{273+40}{273}}$$

$$= 100 \times 1.24 \times 0.414 \times 1.07$$

$$= 54.40 \text{ m}^3/\text{h (nor)}$$

■ LIMITATION OF FLUID VISCOSITY

Refer to the following figure in case of measurement of high viscosity liquid. If the viscosity of liquids is lower than the viscosity curve on the viscosity vs. flow rate graph below, flowmeters are manufactured as a standard procedure. The flow rate tables in this TECHNICAL GUIDANCE can be referred to only by density compensation. If the viscosity is above the curve, contact Tokyo Keiso for detailed investigation by our factory computer.



■ PROCESS CONNECTIONS FOR EACH SIZE

| Meter size | JIS 10K Flange | | | | | | | | | |
|------------|----------------|-----|-----|-----|-----|-----|-----|-----|------|--|
| | 10A | 15A | 20A | 25A | 40A | 50A | 65A | 80A | 100A | |
| 10 | ○ | ○ | ○ | ○ | | | | | | |
| 15 | ○ | ○ | ○ | ○ | | | | | | |
| 20 | ○ | ○ | ○ | ○ | | | | | | |
| 25 | ○ | ○ | ○ | ○ | | | | | | |
| 40 | | | ○ | ○ | ○ | | | | | |
| 50 | | | | | ○ | ○ | | | | |
| 65 | | | | | | ○ | ○ | | | |
| 80 | | | | | | | ○ | ○ | | |
| 100 | | | | | | | | ○ | ○ | |

| Meter size | JIS 5K Flange | | | | | | | | | |
|------------|---------------|-----|-----|-----|-----|-----|-----|-----|------|--|
| | 10A | 15A | 20A | 25A | 40A | 50A | 65A | 80A | 100A | |
| 10 | ○ | ○ | ○ | ○ | | | | | | |
| 15 | ○ | ○ | ○ | ○ | | | | | | |
| 20 | | ○ | ○ | ○ | | | | | | |
| 25 | | ○ | ○ | ○ | | | | | | |
| 40 | | | ○* | ○* | ○ | ○ | | | | |
| 50 | | | | | ○ | ○ | ○ | | | |
| 65 | | | | | | ○ | ○ | | | |
| 80 | | | | | | | ○ | ○ | | |
| 100 | | | | | | | | | ○ | |

| Meter size | Rc | | | | |
|------------|-----|-----|-----|-----|---|
| | 1/4 | 3/8 | 1/2 | 3/4 | 1 |
| 10 | | ○ | ○ | | |
| 15 | | | ○ | ○ | |
| 20 | | | | ○ | ○ |
| 25 | | | | | ○ |

*1 20A and 25A are not available for meter size 40mm (2).

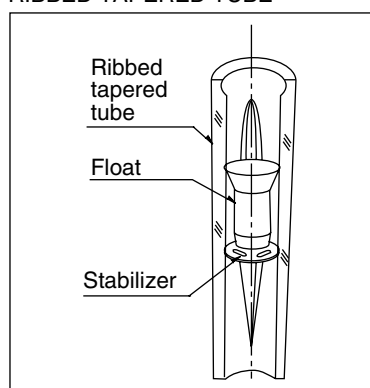
■ SPECIAL MATERIAL, CONSTRUCTION PRODUCTS

■ RIBBED TAPERED TUBE VERSION

□ OUTLINE

Float is guided by rib construction inside of glass tapered tube. No float rod is provided and they are suitable for measurement of liquids with certain solids. Also, the distance from inner surface to float is stable and relatively close, and observation of float is easier than that of standard flat tapered tubes.

RIBBED TAPERED TUBE



□ STANDARD SPECIFICATION

- Available size : 10, 15, 20, 25, 40(1), 40(2) and 50 (Meter size)

Other specification is equal to that of STANDARD MATERIAL PRODUCTS.

Lined material also available.

□ CAPACITY RATING

| Meter size | Flow rate *1 | | Pressure Drop *2 (kPa) |
|------------|--------------|-------------------------------|------------------------|
| | Water (L/h) | Air [m ³ /h (nor)] | |
| 10 | 50 to 160 | 1.5 to 4.8 | 4 |
| 15 | 425 | 13 | 4 |
| 20 | 1050 | 30 | 5 |
| 25 | 1650 | 50 | 6.5 |
| 40 (1) | 2650 | 75 | 5.5 |
| 40 (2) | 4400 | 130 | 6 |
| 50 | 7900 | 235 | 6.5 |

*1: Flow rate for stainless steel floats.

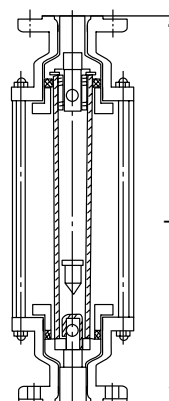
*2: Approx. pressure drop at possible max. full scales.

■ GLASS LINED PRODUCTS

□ OUTLINE

For the measurement of very corrosive acids, e.g. Hydrochloric acid, Sulfuric acid, Chlorine gas, glass lined body flowmeters are used. Limitation of manufacturing sizes is applicable. Refer to following.

□ DIMENSION



| Meter size | L (mm) |
|------------|--------|
| 20 | 450 |
| 25 | 500 |
| 40 | 520 |
| 50 | 630 |

□ STANDARD SPECIFICATION

- Available size : 20, 25, 40 and 50 (Meter size)
- Fluid temp : Max. 110°C
- Material :
 - Body : Glass lined cast iron
 - Tapered tube : Heat-resistant glass
 - Float : PVC, PTFE, MA (Equivalent to Hastelloy) Titanium, etc.
 - Packing : PTFE, FPM, NBR, Others

Other specification is equal to that of STANDARD MATERIAL PRODUCTS.

□ CAPACITY RATING

| Meter size | Flow rate | | | |
|------------|-------------|------------------|-------------------------------|------------|
| | Water (L/h) | | Air [m ³ /h (nor)] | |
| | MA float | PTFE • PVC float | PVC float | PTFE float |
| 20 | 9 to 1100 | 35 to 700 | 0.12 to 22 | 0.5 to 22 |
| 25 | 1850 | 1150 | 37 | 37 |
| 40 | 4600 | 3300 | 96 | 96 |
| 50 | 9500 | 6800 | 200 | 200 |

RUBBER LINED, PVC LINED PRODUCTS

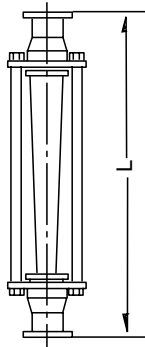
OUTLINE

This model consisting of all wetted parts made of rubber or PVC lined materials are suitable for corrosive services.

STANDARD SPECIFICATION

- Available size : 10 to 100 (Meter size)
 - Fluid temp. :
 - Rubber lined Max.90°C
 - PVC lined Max.60°C
- Other specification is equal to that of STANDARD MATERIAL PRODUCTS

DIMENSION : Model R-101



| Meter size (mm) | L (mm) |
|-----------------|--------|
| 10 | 420 |
| 15 | 420 |
| 20 | 430 |
| 25 | 500 |
| 40 | 500 |
| 50 | 530 |
| 65 | 530 |
| 80 | 570 |
| 100 | 590 |

CAPACITY RATING

| Meter size | Flow rate | | |
|------------|----------------|------------------|--------------|
| | Water (L/h) | Air [m³/h (nor)] | |
| | PVC.PTFE float | PVC float | PTFE float |
| 10 | 35 to 55 | 0.5 to 1.4 | 0.15 to 1.75 |
| 15 | 230 | 5.17 | 6.5 |
| 20 | 700 | 22 | 22 |
| 25 | 1150 | 37 | 37 |
| 40 (1) | 1900 | 50 | 50 |
| 40 (2) | 3300 | 96 | 96 |
| 50 | 6800 | 200 | 200 |
| 65 | 9500 | 280 | 280 |
| 80 | 16000 | 430 | 430 |
| 100 | 42800 | 1000 | 1000 |

POLYSULFON TAPERED TUBE VERSION (R-101-SU)

OUTLINE

R-101-SU employs Polysulfone made tapered tube which is durable and suitable for strong alkalines such as caustic soda. This is very much suitable for caustic soda measurement application where glass tube is not suitable due to anti-corrosion capability against fluid. And also suitable for saturated brine lines.

STANDARD SPECIFICATION

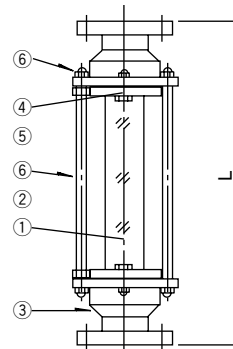
- Measuring fluid : Transparent liquids (Suitable for caustic soda and brine)
- Available size : 25, 40, 50 and 80 (Meter size)
- Process connection : JIS10K flanges (Other flanged on request)
- Flow direction : Bottom to Top
- Fluid press. : Max. 0.5MPa
- Fluid temp. : Max. 100°C
- Indication Accuracy : ±3% F.S.

Material availability

| No. | Parts name | Material |
|-----|------------------|---|
| 1 | Tapered tube | Polysulfone |
| 2 | Float | PTFE, Titanium, Stainless steel, Others |
| 3 | Body | PP, Rubber lined, PTFE lined, Stainless steel |
| 4 | Packing | EPDM, FPM |
| 5 | Packing follower | SS400 (SUS304) |
| 6 | Column | SS400 (SUS304) |

Options : ① Normal flow rate indication pointer
 ② Optical alarm unit

DIMENSION



| Meter size | Dimension L (mm) | Mass (Approx.) kg |
|------------|------------------|-------------------|
| 25 | 330 | 6 |
| 40 | 360 | 7 |
| 50 | 360 | 9 |
| 80 | 400 | 12 |

CAPACITY RATING

| Meter size | Water flow rate (m³/h) | | | Connection size |
|------------|------------------------|----------------|-------------|-----------------|
| | Stainless steel float | Titanium float | PTFE float | |
| 25 | 0.7 to 1.25 | 0.6 to 1.1 | 0.5 to 0.95 | 20, 25, 40mm |
| 40 | 4.5 | 4 | 3.5 | 25, 40, 50mm |
| 50 | 9 | 8 | 7 | 40, 50, 65mm |
| 80 | 24 | 24 | 15 | 65, 80, 100mm |

■ R-105-RK and R-105-RKS PANEL MOUNT, FOR GASES

□ OUTLINE

R-105-RK and R-105-RKS are panel mount type glass tube flowmeter for gas measurement and very much suitable for monitoring of injection gas flow rate into furnaces. Ribbed tapered tube is used for stable indication even for low pressure gas supply line. Also, the pressure drop is designed low to meet the requirement in such applications.

R-105-RK • R-105-RKS Basic Model Code

| Series | Meter size | Connection size | Standard | Float material | Packing material | Alarm output | Pointer | Oil preventive treatment | Special item |
|------------------------|---|-----------------|----------|----------------|------------------|--------------|-------------------------|-----------------------------------|---------------------|
| R-105-RKS | A | A | R | A | N | 0 | 0 | 0 | 0 |
| R-105-RK and R-105-RKS | | | | | | | With or without pointer | 0: Not treated | 0: w/o special item |
| | | | | | | | | 1: Treated | Z: w/special item |
| | | | | | | | | 0: Not provided | |
| | | | | | | | | 1: With 1 point | |
| | | | | | | | | 2: With 2 points | |
| | | | | | | | | O : With alarm | |
| | | | | | | | | L : Lower limit alarm - 1 point | |
| | | | | | | | | H : Upper limit alarm- 1 point | |
| | | | | | | | | HL : Upper and lower limit alarm | |
| | | | | | | | | LL : Lower limit alarm - 2 points | |
| | | | | | | | | HH : Upper limit alarm - 2 points | |
| | | | | | | | | N : NBR | |
| | | | | | | | | F : FPM | |
| | | | | | | | | E : EPDM | |
| | | | | | | | | Z : Others | |
| A : Aluminum | Standard material: Aluminum | | | | | | | | |
| 4 : SUS304 | | | | | | | | | |
| 6 : SUS316 | | | | | | | | | |
| Z : Others | | | | | | | | | |
| R : Rc | Rc connection is our standard. Corresponding with adapter (Male & Female) for other connection sizes | | | | | | | | |
| N : NPT | | | | | | | | | |
| Z : Others | | | | | | | | | |
| A : 3/8 | Same diameter as meter size is standard. Corresponding with accessories like adapter (male and female) in case of different connection size from meter size | | | | | | | | |
| B : 1/2 | | | | | | | | | |
| C : 3/4 | | | | | | | | | |
| D : 1 | | | | | | | | | |
| E : 1-1/2 | | | | | | | | | |
| F : 2 | | | | | | | | | |
| A : 10 | Materials Body : SCS14 (R-105-RKS) Aluminum (R-105-RK) Tapered tube : Heat-resistant glass with ribs | | | | | | | | |
| B : 15 | | | | | | | | | |
| C : 20 | | | | | | | | | |
| D : 25 | | | | | | | | | |
| E : 40 | | | | | | | | | |
| F : 50 | | | | | | | | | |

| Parts name | Model code | |
|------------------------|----------------------|-----------|
| | R-105-RK | R-105-RKS |
| Body | Aluminum | SCS14 |
| Tapered tube with ribs | Heat-resistant glass | |
| Float | Aluminum | |
| O-ring | NBR | |
| Cover | SPCC | |
| Fixtures | SPCC | |
| Cap | SUS304 | |

□ STANDARD SPECIFICATION

- Measuring fluid : Gases such as air, nitrogen, propane and butane
- Available size (Meter size) : 10, 15, 20, 25, 40 and 50
- Installation : Panel mount
- Process connection : Rc
- Flow direction : Bottom rear to Top rear
- Fluid press : Max. 0.3MPa
- Fluid temp. range : 0 to 120°C
- Max. thermal shock : 80°C
- Indication accuracy : ±2% F.S.
(A pointer indicating normal flow rate can be installed on request)
- Alarm contact : Available on request, 1 or 2 points
Contact : SPST, self-holding Reed switch
Setting accuracy : ±2% F.S. Adjustable (Against flow calibration)
Reset span : Max.15% F.S. (Against flow calibration)
Enclosure : Water tight
Wiring : Direct connection to reed wire
- Paint : Metallic silver

Capacity rating and approximate pressure drop for local indicator with aluminum float

| Meter size | Flow rate {Air, m ³ /h(nor)} | Pressure drop (kPa) |
|------------|---|---------------------|
| 10 | 1.1 to 1.8 | 0.8 |
| 15 | 1.8 to 6.0 | 1.0 |
| 20 | 3.6 to 14 | 1.2 |
| 25 | 12 to 24 | 1.2 |
| 40 | 24 to 60 | 1.2 |
| 50 | 60 to 110 | 1.5 |

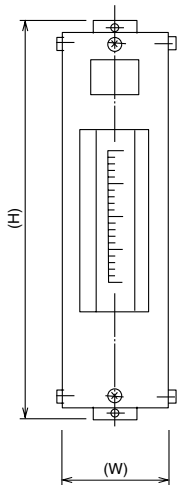
Capacity rating and approximate pressure drop for alarm type with aluminum float

| Meter size | Flow rate {Air, m ³ /h (nor)} | Pressure drop (kPa) |
|------------|--|---------------------|
| 10 | Not available | |
| 15 | 4.8 to 8.0 | 1.6 |
| 20 | 7.5 to 19 | 2.4 |
| 25 | 16 to 32 | 2.5 |
| 40 | 32 to 70 | 2.0 |
| 50 | 70 to 120 | 2.0 |

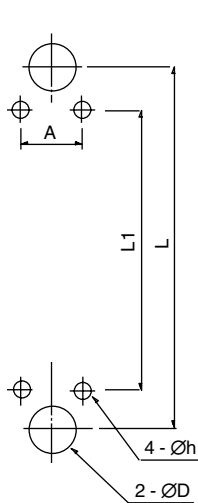
Full scale can be specified within the range of flow rates of each size shown in above table with the rangeability 10:1. Figures in above table is the flow rate of air at 0°C and 1 atm with density 1.293 kg/m³ (nor).

DIMENSION

Body



Panel cut



MODEL R-105-RK

| Meter size | Dimension (mm) | | | | Panel cut (mm) | | | | Mass (approx.) kg |
|------------|----------------|-----|-----|-----|----------------|----|----|-----|-------------------|
| | (H) | (W) | B | L | D | h | A | L1 | |
| 10 | 440 | 53 | 50 | 380 | 20 | 6 | 24 | 350 | 2.2 |
| 15 | 450 | 73 | 65 | 390 | 25 | 6 | 40 | 370 | 3.5 |
| 20 | 460 | 83 | 75 | 400 | 31 | 8 | 40 | 360 | 4.5 |
| 25 | 540 | 93 | 85 | 460 | 38 | 8 | 45 | 430 | 6.5 |
| 40 | 590 | 103 | 95 | 490 | 53 | 10 | 50 | 435 | 8.5 |
| 50 | 640 | 143 | 135 | 520 | 60 | 10 | 60 | 440 | 16 |

MODEL R-105-RKS

| Meter size | Dimension (mm) | | | | Panel cut (mm) | | | | Mass (approx.) kg |
|------------|----------------|-----|----|-----|----------------|----|----|-----|-------------------|
| | (H) | (W) | B | L | D | h | A | L1 | |
| 10 | 430 | 40 | 47 | 380 | 20 | 8 | 20 | 320 | 1.8 |
| 15 | 430 | 50 | 52 | 380 | 25 | 8 | 30 | 320 | 2.2 |
| 20 | 450 | 55 | 62 | 390 | 31 | 8 | 30 | 320 | 2.8 |
| 25 | 530 | 65 | 67 | 460 | 38 | 10 | 30 | 380 | 4 |
| 40 | 570 | 75 | 82 | 480 | 53 | 10 | 40 | 380 | 7 |
| 50 | 590 | 85 | 97 | 490 | 60 | 10 | 40 | 380 | 9.2 |

OPTIONAL PARTS

PROTECTION COVER

Transparent PVC and steel plate are ready to protect tapered tube. Specify if required.

FLOW ADJUSTING VALVE

A valve for flow adjustment will be assembled onto flowmeter on request.

ORDERING INFORMATION

Notify the following for order/inquiry

Model R-10 -

Fluid name _____
 Density _____
 Viscosity _____
 Press. _____
 Temp. _____

Full scale _____

Connection size _____ mm inch
 Connection rating JIS10RF Rc

Material Cast iron SUS304 SUS316
Other special (_____)

Special instruction, if any _____

Cautions on the use of glass tube variable area flowmeters

CAUTION

Avoid the use of glass tube variable area flowmeters for the following services.

- Liquid services subject to impulse pressure in the process.
- Secondary accidents might occur due to the breakage of glass in such services :
 - Toxic fluids such as poisons, stimulant and narcotics
 - Flammable fluids
 - Explosive fluids
- Gas handling process where breakage of glass might result in gas leakage or scattering of glass fragments.
- The installation places of the flowmeters where breakage of glass might be caused by the accidents from the surrounding piping or equipment.
- On-off operation where breakage of glass might be caused by the collision of the float inside meter due to the abrupt change of flow.
- Services where the heat shock by abrupt change of temperature is expected.

■ RELATED PRODUCTS

In addition to R-100 series Glass tube flowmeters, the following flowmeters are also available for cost effective and simple flow measurement :

□ R-751-R



Glass tube flowmeters with alarm contact(s)

□ AC series



The flowmeters made of PVC or engineering plastics are suitable for semiconductor manufacturing plants by eliminating introduction of metallic ions.

□ NE series



Glass tube flowmeter with standardized specification. Quick delivery and cost saving!

* Specification is subject to change without notice.

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