

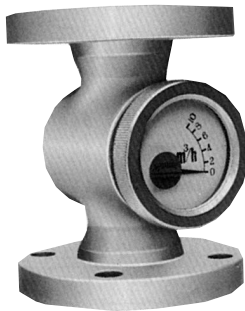
K Series

SIGHT GLASS

■ GENERAL

K series are sight glasses for observation of various liquids. Different types are available to meet applications and requirements. Cast iron, stainless steel as well as glass lined material are ready to cover corrosive liquids.

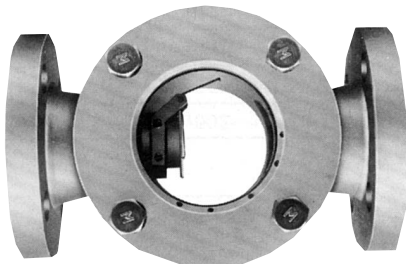
■ K-200 Magnet coupling type



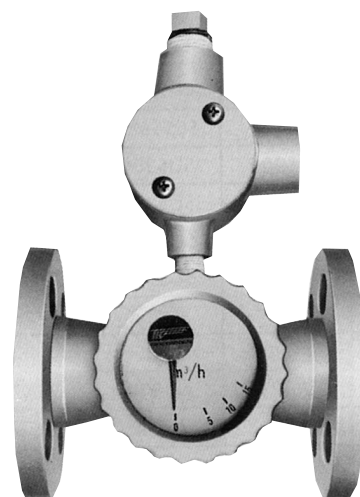
■ K-600 Direct observation lantern type



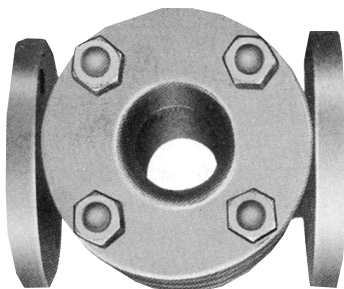
■ K-400 Flapper type



■ K-700 Magnet coupling indication with alarm contact type



■ K-500 Direct observation type



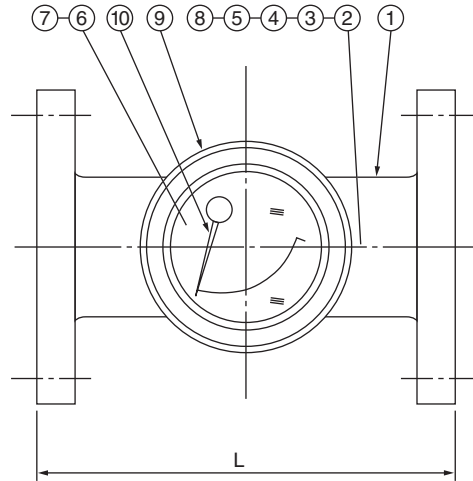
K-200 SERIES

K-200 is a Magnet coupling, pointer indication type sight glass.
 A flapper is located in flow path and the movement of the flapper is transferred to the pointer by magnetic coupling for the indication on the scale plate.
 K-200 is suitable for monitoring of opaque liquids.

STANDARD SPECIFICATION

- Available size : 20 to 300
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange connection
Std. JIS10K RF/FF
Opt. ANSI class 150, JIS5K RF/FF, Others
- Fluid temp. (Max.) : With FPM O rings 120°C
With NBR O rings 80°C
It is general data, and the maximum temperature may change by terms of use and environment.
- Fluid press. (Max.) : 50 or smaller 0.7MPa
65 or larger 0.5MPa
- Paint color : Munsell 7.5BG4/1.5 (except for the SUS body)
- Indicator construction : Dust-tight and splash-proof (IP54 equivalent)

DIMENSION



MODEL CODE

K	-	2	0	Description
Flow direction	1	Bottom to Top		
	6	Left to Right		
	7	Right to Left		
	8	Top to Bottom		

MATERIAL CONSTRUCTION

No.	Description	Material		
		1	2	3
1	Body	FC200 *1	SCS13 *2	SCS14 *3
2	Nozzle	SUS304	SUS304	SUS316
3	Flapper shaft	SUS304	SUS304	SUS316
4	Flapper	SUS304	SUS304	SUS316
5	Spring	SUS304	SUS304	SUS316
6	Window Glass	Glass	Glass	Glass
7	Scale plate	A1050P	A1050P	A1050P
8	O ring	NBR *4	NBR *4	NBR *4
9	Cap	AC2A	AC2A	AC2A
10	Pointer	A1050P	A1050P	A1050P

*1 : SS400/SGP for 125 or larger.
 *2 : SUS304 for 100 or larger.
 *3 : SUS316 for 100 or larger.
 *4 : FPM O rings on request

Meter Size	Flow range (Water, m ³ /h)		Dimension L (mm)	MASS (Approx.) kg
	Min.	Max.		
20 *	1	15	160	4.5
25	1	15	160	5
40	1	15	160	6
50	1	15	160	7
65	15	45	220	11
80	15	45	220	11.5
100	30	60	220	13.5
125	70	120	250	15
150	100	150	250	20
200	120	200	280	27
250	150	250	280	45
300	200	300	280	47

* : Applicable only for JIS flange

Scale graduation

Full scale	Scale Graduation
10	0 2 4 6 8 10
12	0 3 6 9 12
15	0 5 10 15
20	0 5 10 15 20
25	0 5 10 15 20 25
30	0 10 20 30
35	0 10 20 30 35
40	0 10 20 30 40
45	0 10 20 30 40 45
50	0 10 20 30 40 50
55	0 20 40 55
60	0 20 40 60
65	0 20 40 60 65
70	0 20 40 60 70
75	0 20 40 60 75
80	0 20 40 60 80
85	0 20 40 60 85
90	0 30 60 90
95	0 30 60 95

K-400 SERIES

K-400 is a direct see-through type sight glass with internal flapper. In addition to normal observation of liquid colour and introduction of foreign particles in liquids, approximate flow rate of liquid can be monitored by the opening angle of flapper.

STANDARD SPECIFICATION

- Available size : 15 to 150
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange connection
Std. JIS10K RF/FF
Opt. ANSI class 150, JIS5K RF/FF, Others
Screw conn. (15 mm (1/2"), 20 mm (3/4"), 25 mm (1"))
Std. Rc
Opt. NPT
- Fluid temp. (Max.) : For PTFE Gasket 150°C
For FPM Gasket 120°C
For NBR Gasket 80°C
It is general data, and the maximum temperature may change by terms of use and environment.
- Fluid press. (Max.) : 50 or smaller 0.7MPa
65 to 150 0.5MPa
- Flow rate indication : Reference indication by flapper opening angle
Std. Reference point provided
Opt. Scale plate provided (K-40 -M)
- Paint color : Munsell 7.5BG4/1.5 (except for the SUS body)

MODEL CODE

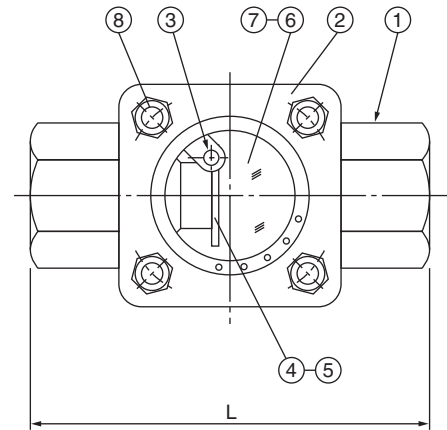
K - 4 0					Description		
Flow direction	1						Bottom to Top
	6						Left to Right
	7						Right to Left
	8						Top to Bottom
Flow rate indication	-						Reference points
	-	M					Scale plate added

MATERIAL CONSTRUCTION

No.	Description	Material		
		1	2	3
1	Body	FC200 *1	SCS13 *2	SCS14 *3
2	Glass holder	SS400 *4	SS400 *4	SS400 *4
3	Flapper shaft	SUS304	SUS304	SUS316
4	Flapper	SUS304	SUS304	SUS316
5	Spring	SUS304	SUS304	SUS316
6	Window Glass	Tempered glass	Tempered glass	Tempered glass
7	Gasket	NBR *5	NBR *5	NBR *5
8	Bolt, Nut	SS400	SS400	SS400

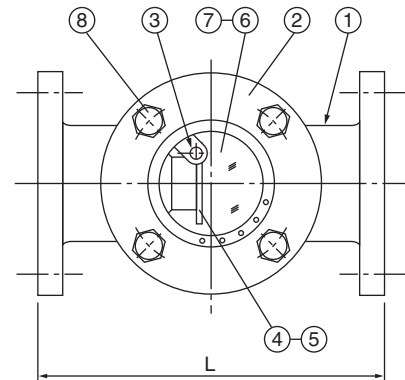
*1 : SS400/SGP for 125 or larger.
 *2 : SUS304 for 125 or larger.
 *3 : SUS316 for 125 or larger.
 *4 : FC200 for 25 or smaller.
 *5 : FPM or PTFE gasket on request

DIMENSION FOR SCREW CONNECTION



Meter size	Flow range (Water, m³/h)		Dimension L (mm)	MASS (Approx.) kg
	Min.	Max.		
15	0.3	3	120	2.8
20	0.3	3	120	2.8
25	0.3	3	120	2.8

DIMENSION FOR FLANGE CONNECTION



Meter size	Flow range (Water, m³/h)		Dimension L (mm)	MASS (Approx.) kg
	Min.	Max.		
15	0.3	3	150	4
20	0.3	3	150	4.5
25	0.3	3	150	5.5
40	2	20	230	12
50	2	20	230	13
65	15	45	260	17.5
80	15	45	260	18
100	30	60	280	24
125	70	120	250	40
150	100	150	300	46

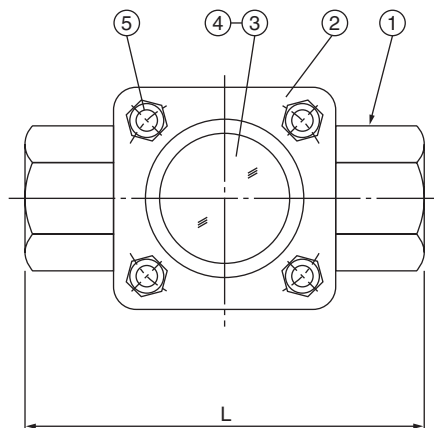
K-500 SERIES

K-500 is a direct see-through type sight glass.
 Quality of liquid flow, such as color, status of introduction of foreign particles, can be observed through window glass. Besides normal metallic material, glass lined products are also available to cover corrosive liquids.

STANDARD SPECIFICATION

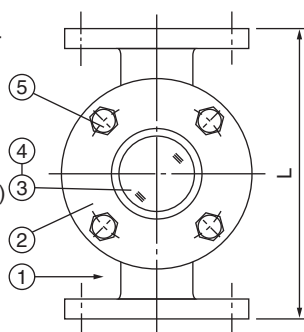
- Available size : 15 to 150
 Glass lined 25 to 100 is not applicable)
- Measuring fluid : All types of Liquids
- Process connection : Flange conn. (15 mm (1/2") to 150 mm (6"))
 Std. JIS10K RF/FF
 Opt. ANSI class 150, JIS5K RF/FF, Others
- Screw connection
 Std. Rc
 Opt. NPT
 (Glass lined is only applicable for JIS10KRF)
- Fluid temp. (Max.) : For PTFE gasket 150°C
 For FPM gasket 120°C
 For NBR gasket 80°C
 For Glass Lined material 110°C
 It is general data, and the maximum temperature may change by terms of use and environment.
- Fluid press. (Max.) : 50 or smaller 0.7MPa
 65 to 150 0.5MPa
 Glass Lined material 0.7MPa
- Paint color : Munsell 7.5BG4/1.5 (except for the SUS body)

DIMENSION FOR SCREW CONNECTION



Meter size	Dimension L (mm)	MASS (Approx.) kg
15 ~ 25	120	2.8

DIMENSION FOR FLANGE CONNECTION



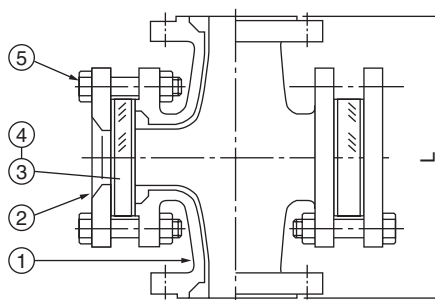
Meter size	Dimension L (mm)	MASS (Approx.) kg
15	150	4
20	150	4.5
25	150	5.5
40	230	12
50	230	13
65	260	17.5
80	260	18
100	280	24
125	250	40
150	300	46

MATERIAL CONSTRUCTION

No.	Description	Material			
		1	2	3	4
1	Body	FC200 *1	SCS13 *2	SCS14 *3	FC200/ Glass lined
2	Glass holder	SS400 *4	SS400 *4	SS400 *4	SS400 *4
3	Window Glass	Tempered glass	Tempered glass	Tempered glass	Tempered glass
4	Gasket	NBR *5	NBR *5	NBR *5	PTFE
5	Bolt, Nut	SS400	SS400	SS400	SS400

*1 : SS400/SGP for 100 or larger.
 *2 : SUS304 for 125 or larger.
 *3 : SUS316 for 125 or larger.
 *4 : FC200 for 25 or smaller.
 *5 : FPM or PTFE gasket on request

DIMENSION FOR GLASS LINED MATERIAL



Meter size	Dimension L (mm)	MASS (Approx.) kg
25	190	11.5
40	204	15.5
50	252	19
80	286	31
100	286	39.5

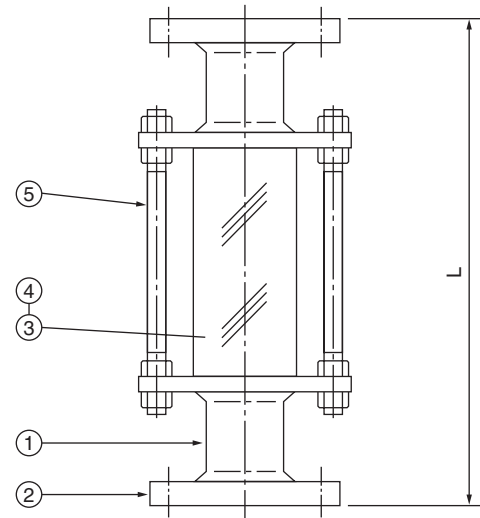
K-600 SERIES

K-600 is a Lantern type direct observation sight glass. The glass tube is designed wide and straight and the liquid flowing condition can be easily monitored. K-600 is suitable for installation onto vertical pipe lines.

STANDARD SPECIFICATION

Available size	: 15 to 125	
Measuring fluid	: All types of Liquids	
Process connection	: Flange connection Std. JIS10K RF/FF Opt. ANSI class 150, JIS5K RF/FF, Others	
Fluid temp. (Max.)	: For FPM gaskets	120°C
	: For NBR gaskets	80°C
	It is general data, and the maximum temperature may change by terms of use and environment.	
Fluid press. (Max.)	: 15, 20, 25	0.7MPa
	: 40, 50	0.5MPa
	: 65 to 125	0.4MPa
Sight glass length	: 80mm (3") (Observation range)	
Paint color	: Munsell 7.5BG4/1.5 (except for the SUS body)	

DIMENSION



MODEL CODE

No.	Description	Material		
		1	2	3
1	Body	SS400/SGP	SUS304	SUS316
2	Flange	SS400	SUS304	SUS316
3	Sight Glass *1	Heat-resistant glass	Heat-resistant glass	Heat-resistant glass
4	Gasket	NBR *2	NBR *2	NBR *2
5	Column, Nut	SS400	SS400	SS400

*1 : Acryl made sight glass on request

*2 : FPM gasket on request

Meter size	Dimension L (mm)	MASS (Approx.) kg
15	190	2.5
20	200	3
25	220	5.5
40	230	7.5
50	260	9
65	270	14
80	320	15
100	340	18
125	340	32

K-740 SERIES

K-740 is the type with a micro switch alarm contact added on the K-200 which is the direct indication type sight glass with magnet coupling mechanism.
This type is used for flow cut-off alarming in addition to flow monitoring.

STANDARD SPECIFICATION

- Available size : 15 to 300
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange connection
Std. JIS10K RF/FF
Opt. ANSI class 150, JIS5K RF/FF, Others
- Fluid temp. (Max.) : With FPM O rings 100°C
With NBR O rings 80°C
It is general data, and the maximum temperature may change by terms of use and environment.
- Fluid press. (Max.) : 50 or smaller 0.7MPa
65 or larger 0.5MPa
- Alarm contact : 1Point Low
Contact : Microswitch SPDT
Contact capacity : 250 V AC, 5A (Resistance Load)
Setting accuracy : ±10% F.S. (against flow calibration)
Note: The indication of flow rates except for the alarm setting value may be less accurate just after turning on the switch.
- Reset span : Less than 20%F.S. (Against flow calibration)
- Cable entry : G 1/2 (PF 1/2)
- Construction : Dust-tight and splash-proof (IP54 equivalent)

MODEL CODE

			K	-	7	4		Description
Construction								Water tight
	IS	-						Intrinsically safe *
Flow direction							1	Bottom to Top
							6	Left to Right
							7	Right to Left
							8	Top to Bottom

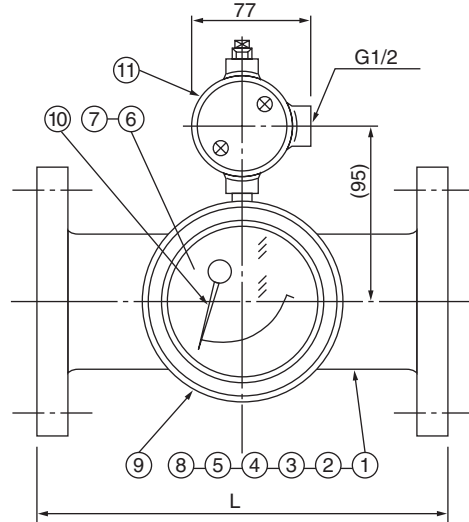
*ExialICT6, Safety relay to be separately installed

OUTLINE

No.	Description	Material		
		1	2	3
1	Body	FC200 *1	SCS13 *2	SCS14 *3
2	Nozzle	SUS304	SUS304	SUS316
3	Flapper shaft	SUS304	SUS304	SUS316
4	Flapper	SUS304	SUS304	SUS316
5	Spring	SUS304	SUS304	SUS316
6	Window Glass	Glass	Glass	Glass
7	Scale plate	A1050P	A1050P	A1050P
8	O ring	NBR *4	NBR *4	NBR *4
9	Cap	AC2A	AC2A	AC2A
10	Pointer	A1050P	A1050P	A1050P
11	Terminal Box	AC2A	AC2A	AC2A

- *1 : SS400/SGP for 15, 65 or larger.
- *2 : SUS304 for 15, 65 or larger.
- *3 : SUS316 for 15, 65 or larger.
- *4 : FPM O rings on request

DIMENSION



Meter size	Flow range (Water, m³/h)		Dimension L (mm)	MASS (Approx.) kg
	Min.	Max.		
15	0.6	2	160	4.7
20 *	1	15	160	4.5
25	1	15	160	5
40	1	15	160	6
50	1	15	160	7
65	15	45	220	11
80	15	45	220	11.5
100	30	100	220	13.5
125	70	120	250	15
150	100	150	250	20
200	120	200	280	27
250	150	250	280	45
300	200	300	280	47

* : Applicable only for JIS flange

Scale graduation

Full scale	Scale Graduation
10	0 2 4 6 8 10
12	0 3 6 9 12
15	0 5 10 15
20	0 5 10 15 20
25	0 5 10 15 20 25
30	0 10 20 30
35	0 10 20 30 35
40	0 10 20 30 40
45	0 10 20 30 40 45
50	0 10 20 30 40 50
55	0 20 40 55
60	0 20 40 60
65	0 20 40 60 65
70	0 20 40 60 70
75	0 20 40 60 75
80	0 20 40 60 80
85	0 20 40 60 85
90	0 30 60 90
95	0 30 60 95

◆ ORDERING INFORMATION

Specify the following for order and / or inquiry :

Model code _____

Fluid name _____

Density _____

Viscosity _____ mPa·s

Pressure Nor. _____ Max. _____ MPaTemperature Nor. _____ Max. _____ °C

Connection size _____

Connection flange rating _____

Measuring range (Only for K-200, 400 and 700)

Full scale _____ m³/h L/minMaterial Body _____Gasket _____

In case of IS-K-700 (Intrinsically safe type)

IS relay To be supplied by the purchaser To be supplied by Tokyo keiso

EB3C made by IDEC. _____ Q'ty _____

Cautions to select flowmeter when using glass for pressure containing part

 CAUTION

When selecting flowmeter, for which glass is used for pressure containing part, the following points shall be taken into consideration.

1. Liquid services subject to impulse pressure in the process.
2. 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
3. Gas handling process where breakage of glass might result in gas leakage or scattering of glass fragments.
4. The installation places of the flowmeters where breakage of glass might be caused by the accidents from the surrounding piping or equipment.
5. 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.
6. Services where the heat shock by abrupt change of temperature is expected.

* Specification is subject to change without notice.


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