



TECHNICAL GUIDANCE

FOR OBSERVATION OF LIQUID FLOW

K SERIES SIGHT GLASS

■ GENERAL

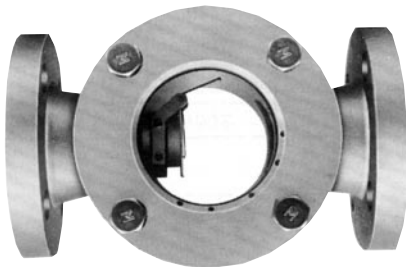
K series are sight glasses for observation of various liquids. Different types are available to meet applications and requirements. Cast iron, stainless steel as well as glass lined material are ready to cover corrosive liquids.



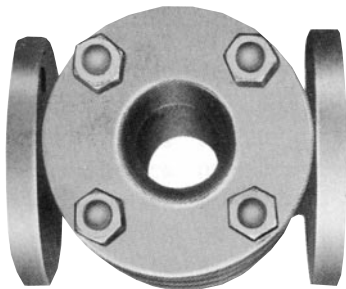
K-200 Magnet coupling type



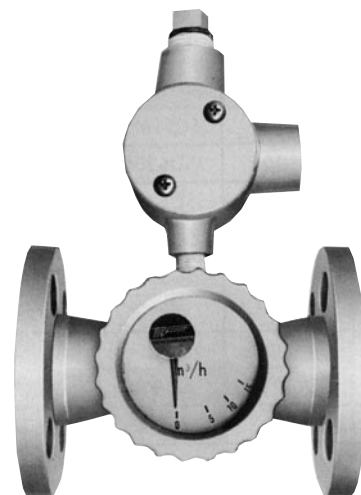
K-600 Lantern type



K-400 Flapper type



K-500 Direct observation type



K-700 Magnet coupling indication with alarm contact 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 by magnetic coupling and indicated by a pointer and a scale plate.
K-200 is suitable for monitoring of flow condition of opaque liquids.

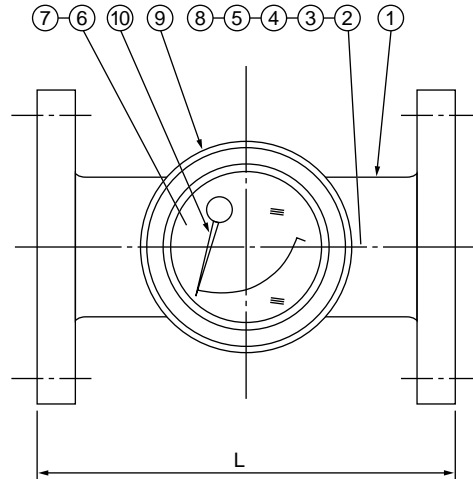
STANDARD SPECIFICATION

- Available size : 20mm (3/4") ~ 300mm (12")
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange connection
Std. JIS10KRF/FF
Opt. ANSI#150, JIS5KRF/FF, Others
- MAX. liquid temp. : With Viton O rings 120°C
With NBR O rings 80°C
- Pressure range : upto 50mm (2") 7kgf/cm²G
65mm (2-1/2") ~ 5kgf/cm²G
- Painting : Std. Munsell 7.5BG4/1.5

MODEL CODE

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

DIMENSION



Size (mm)	Available scale range (Water, m ³ /h)		Dimension L (mm)	Approx. weight (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

DIMENSION

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 125mm (5") or larger.
*2 : SUS304 for 100mm (4") or larger.
*3 : SUS316 for 100mm (4") or larger.
*4 : Viton O rings on request

Standard scale graduation

Full scale	Standard 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

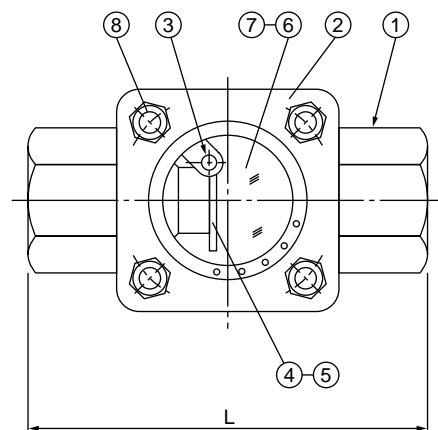
K-400 SERIES

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 articles in liquids, approximate flow rate of liquid can be monitored by the opening angle of flapper.

STANDARD SPECIFICATION

- Available size : 15mm (1/2") ~ 150mm (6")
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange conn. (15 ~ 150mm)
Std. JIS10KRF/FF
Opt. ANSI#150, JIS5KRF/FF, Others
Screw conn. (15, 20 and 25mm)
Std. Rc thread
Opt. NPT thread
- MAX. liquid temp. : For TEFLON Gasket 150°C
For Viton Gasket 120°C
For NBR Gasket 80°C
- Pressure range : upto 50mm 7kgf/cm²G
65 ~ 150mm 5kgf/cm²G
- Flow rate indication : Reference indication by flapper opening angle
Std. Reference point provided
Opt. Scale plate provided (K-400-M)
- Painting : Std. Munsell 7.5BG4/1.5

DIMENSION FOR SCREW CONNECTION

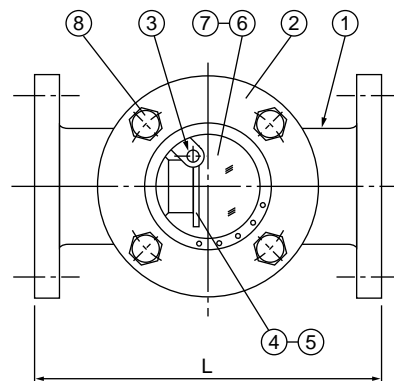


Size (mm)	Available scale range (Water, m ³ /h)		Dimension L (mm)	Approx. weight (kg)
	Min.	Max.		
15	0.3	3	120	2.8
20	0.3	3	120	2.8
25	0.3	3	120	2.8

MODEL CODE

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

DIMENSION FOR FLANGE CONNECTION



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 125mm (5") or larger.
 *2 : SUS304 for 125mm (5") or larger.
 *3 : SUS316 for 125mm (5") or larger.
 *4 : FC200 for 25mm (1") or smaller.
 *5 : Viton or Teflon gasket on request

Size (mm)	Available scale range (Water, m ³ /h)		Dimension L (mm)	Approx. weight (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

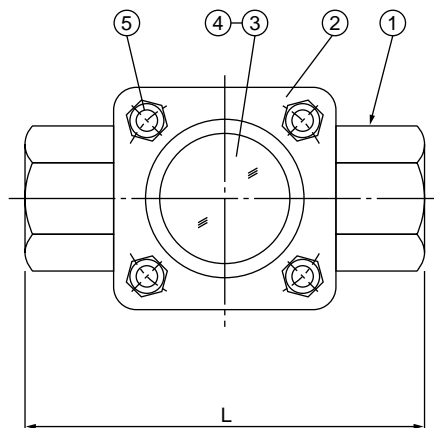
K-500 SERIES

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

STANDARD SPECIFICATION

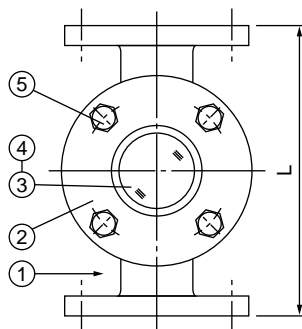
- Available size : 15 ~ 150mm
Glass lined 25 ~ 100mm (65mm is not applicable)
- Measuring fluid : All types of Liquids
- Process connection : Flange conn. (15 ~ 150mm)
Std. JIS10KRF/FF
Opt. ANSI#150, JIS5KRF/FF, Others
- Screw conn. (15, 20 and 25mm)
Std. Rc thread
Opt. NPT thread
(Glass lined is only applicable for JIS10KRF)
- MAX. liquid temp. : For TEFLON gasket 150°C
For Viton gasket 120°C
For NBR gasket 80°C
For Glass Lined material 110°C
- Pressure range : upto 50mm 7kgf/cm²G
65 ~ 150mm 5kgf/cm²G
Glass Lined material 7kgf/cm²G
- Painting : Std. Munsell 7.5BG4/1.5

DIMENSION FOR SCREW CONNECTION



Size (mm)	Dimension L (mm)	Approx. weight (kg)
15 ~ 25	120	2.8

DIMENSION FOR FLANGE CONNECTION



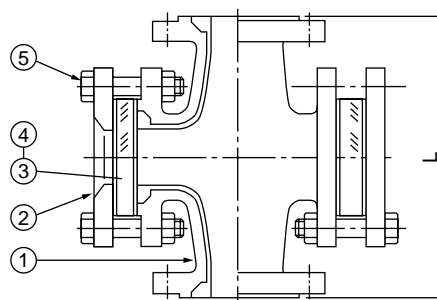
Size (mm)	Dimension L (mm)	Approx. weight (kg)
15	150	4
20	150	4.5
25	150	5.5
40	230	12
50	230	13
65	260	17.5
80	260	18
100	280	24
125	250	40
150	300	46

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	Hard glass
④	Gasket	NBR *5	NBR *5	NBR *5	Teflon
⑤	Bolt, Nut	SS400	SS400	SS400	SS400

*1 : SS400/SGP for 125mm (5") or larger.
 *2 : SUS304 for 125mm (5") or larger.
 *3 : SUS316 for 125mm (5") or larger.
 *4 : FC200 for 25mm (1") or smaller.
 *5 : Viton or Teflon gasket on request

DIMENSION FOR GLASS LINED MATERIAL



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

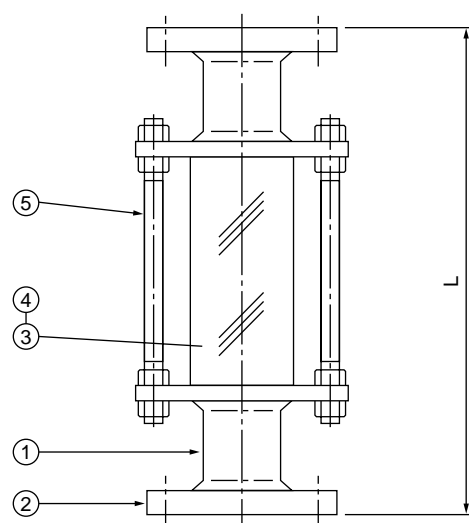
K-600 SERIES

DIMENSION

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	: 15mm (1/2") ~ 125mm (5")
Measuring fluid	: All types of Liquids
Process connection	: Flange connection Std. JIS10KRF/FF Opt. ANSI#150, JIS5KRF/FF,Others
MAX. liquid temp.	: For Viton gaskets 120°C For NBR gaskets 80°C
Pressure range	: 15, 20 and 25mm 7kgf/cm ² G 40 and 50mm 5kgf/cm ² G 65 ~ 125mm 4kgf/cm ² G
Sight glass length	: 80mm
Painting	: Std. Munsell 7.5BG4/1.5



MODEL CODE

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

*1 : Acryl made sight glass on request

*2 : Viton gasket on request

Size (mm)	Dimension L (mm)	Approx. weight (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

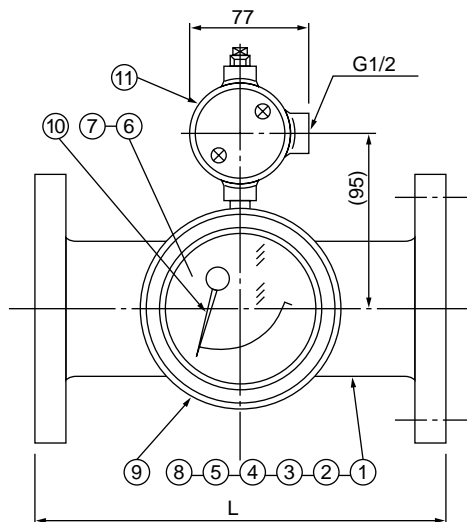
K-740 SERIES

K-740 is provided with a micro switch alarm contact onto K-200, magnet coupling, pointer indication type sight glass. In addition to normal flow rate monitoring, K-700 can be used for flow cut-off alarm.

STANDARD SPECIFICATION

- Available size : 15mm (3/4") ~ 300mm (12")
- Measuring fluid : Liquids
(Not suitable for liquids with solids)
- Process connection : Flange connection
Std. JIS10KRF/FF
Opt. ANSI#150, JIS5KRF/FF,Others
- MAX. liquid temp. : With Viton O rings 100°C
With NBR O rings 80°C
- Pressure range : upto 50mm (2") 7kgf/cm²G
65mm (2-1/2") ~ 5kgf/cm²G
- Painting : Std. Munsell 7.5BG4/1.5
- Alarm contact : 1Point Low
Contact : Microswitch SPDT
- Capacity : AC250V, 5A (Resistance Load)
- Reset span : Max. 20%F.S.
- Cable entry : G 1/2 (PF 1/2)

DIMENSION



Size (mm)	Available scale range (Water, m ³ /h)		Dimension L (mm)	Approx. weight (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

MODEL CODE

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

*13nG5, Safety relay to be separately installed

Standard scale graduation

Full scale	Standard 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

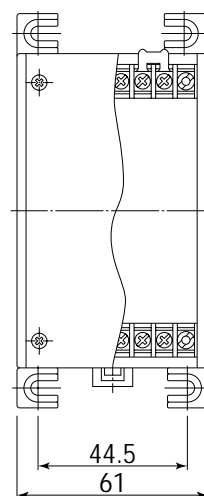
UTLINE

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

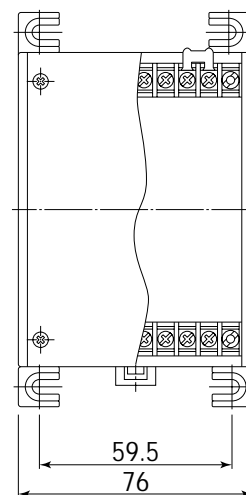
*1 : SS400/SGP for 15mm, 65mm or larger.
 *2 : SUS304 for 15mm, 65mm or larger.
 *3 : SUS316 for 15mm, 65mm or larger.
 *4 : Viton O rings on request

EXTERNAL DIMENSIONS

1 point use (IBRC601) Front view



2 point use (IBRC602) Front view



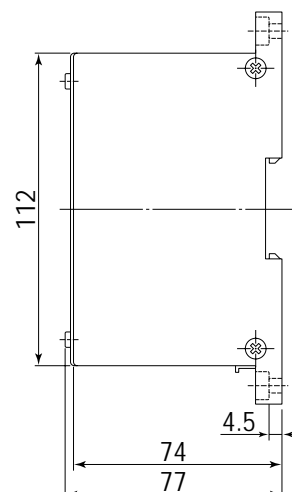
INTRINSICALLY SAFE RELAY

MODEL CODE

Model code				Description
IBRC	6		R	
No. of contact	01			1 point use
	02			2 points use
	03			3 points use
Power supply		1		AC 100/110 V
		2		AC 200/220 V

Classification : 3nG5
 Installation : Wall mount (Open type)
 Location : To be in safe area
 Max. voltage for IS circuit : DC16V
 Max. current in short circuit : DC14mA
 Cable termination : M3 screw terminal
 Power supply : AC100/110V, 50/60Hz or
 AC200/220V, 50/60Hz
 Relay output : AC100V, 5A, AC220V, 2.5A,
 DC24V, 5A(Resistance Load)
 Type approval No. : 37296 (RIIS)

Side view



◆ ORDERING INFORMATION

Specify the following for order and / or inquiry :

Model code _____

Fluid name _____

Density _____

Viscosity _____ cP

Pressure Nor. Max. _____ kgf/cm²G

Temperature Nor. Max. _____ °C

Connection size _____

Connection flange rating _____

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

Full scale _____ m³/h L/min

Material Body _____

Gasket _____

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

IS relay Customer's scope

To be supplied by Tokyo keiso

Model IBRC60 R _____ Q'ty _____

*Specification subject to change without notice



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