

OUTLINE

The **STK2000** and **STK7400** are high-accuracy, high-performance, flapper-type flowmeters. The **STK2000** is a local indication type, and the **STK7400** is a local indication + alarm contact type. Both flowmeters can be compactly mounted on horizontal pipework.

- **STK2000**: Local indication type
- **STK7400**: Local indication + alarm contact type

FEATURES

- Flow direction selectable
- Metal body and PVC body available
- Easy-to-read scale
- Easy maintenance
- No straight runs needed
- Low pressure drop
- Simple structure ensuring high durability

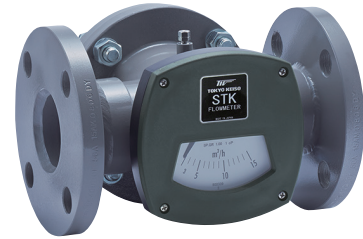
PRINCIPLE

The **STK2000/7400 Series** measures flow rate by using the principle of variable area flowmeters. The flow path is throttled by a flapper whose angle is variable, being supported by a spring. Fluid flow produces a differential pressure between the front and rear of the flapper, which displaces the flapper and thus changes the cross section of the flow path and the spring force. The flapper then rests at the position at which the force due to the differential pressure balances the spring force. The flow rate is shown on the indicator via a magnet attached to the flapper.

STANDARD SPECIFICATIONS

■ General specifications

Measured fluid	: Water, and liquids whose viscosity and density are comparable to those of water
Accuracy	: $\pm 3.0\%$ F. S. (factory calibration with 20°C water)
Flow direction	: Horizontal or vertical



■ Specifications of the metal measuring tube

Meter size	: 15 to 300 mm
Measurement range	: 1.5 to 600 m ³ /h
Process connection	: Flange (JIS 10K FF or ASME Class 150)
Fluid pressure	: Max. 1.0 MPa
Fluid temperature(based on packing material)	: NBR : -20 to +80°C, FPM : -10 to +120°C, EPDM : -20 to +100°C, PTFE : -20 to +120°C

Materials:

		Description	Iron-based material (material code: S)	Stainless steel (material code: 4)
Wetted parts	Main body	15 to 100 mm	Stainless cast steel (SCS14)	
		125 to 300 mm	Carbon steel (SS400/SGP)	Stainless steel (SUS304)
	Detector		Stainless steel/stainless cast steel (SUS304/SCS14)	
	Flange		Carbon steel ^{*2} (SS400)	Stainless steel (SUS304)
	Air vent plug		Stainless steel (SUS304)	
	Packing (O-ring) for back cover		NBR, FPM, EPDM, or PTFE	
Dry parts	Seal plate for back cover		Stainless steel (SUS304)	
	Back cover		Carbon steel (SS400)	
	Nuts and bolts for back cover		Carbon steel ^{*3} (standard)	Stainless steel (standard)

Painting/color ^{*1}: Melamine resin/gray

^{*1} No painting on stainless steel parts.

Flow paths (wetted parts) of iron-based main bodies are painted.

^{*2} The flange material for ASME Class 150 is S25C.

^{*3} Trivalent unichrome plating

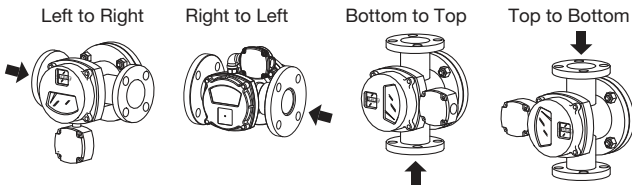
Specifications of the PVC measuring tube

Meter size : 25 to 65 mm
 Measurement range : 3 to 30 m³/h
 Process connection : Flange (JIS 10K FF)
 Fluid pressure : Max. 0.3 MPa
 Fluid temperature : 0 to 40°C
 Materials:

	Description	Materials
Wetted parts	Main body	PVC
	Detector	Flapper: PVC Spring: SUS316 with ETFE coating Shaft: SUS316 with FEP/FRP coating
	Flange	PVC
	Air vent plug	PVC
	Packing (O-ring) for back cover	FPM
	Seal plate for back cover	PVC
Dry parts	Back cover	Stainless steel (SUS304)
	Nuts and bolts for back cover	Stainless steel (SUS304)

Flow direction

- Select one of the four options below when placing an order.



Mounting angle

- The scale surface must be vertical. In horizontal mounting, avoid placing the scale surface facing upward.



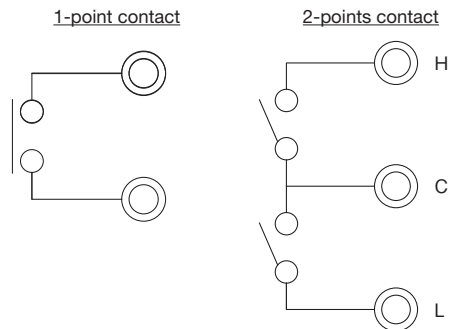
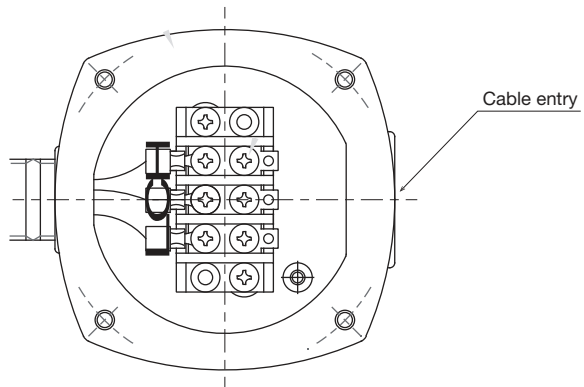
Specifications of the indicator

Indication mechanism: Magnet coupling
 Needle color : Black
 Materials : Housing : Aluminum alloy (ADC12)
 Cover : Reinforced plastic (color: jade green)
 Scale window plate: Acrylic resin
 Painting : Melamine resin (color: black) [housing only]

Specifications of the alarm contact

Number of contacts : 1 or 2
 Switch type : Reed switch (self-holding type)
 Contact actions : A: H limit CLOSE (ON)
 B: H limit OPEN (OFF)
 C: L limit CLOSE (ON)
 D: L limit OPEN (OFF)
 Reset span : Approx. 7% F. S.
 Operating point setting: Set freely with the setting needle (red) on the scale plate
 Settable points : H limit set point: 30% of maximum scale value to maximum scale value
 L limit set point: Minimum scale value to 90% of maximum scale value
 (The two points cannot be the same set point. Make sure they are apart from each other by at least 10% of maximum flow.)
 Contact ratings : Switching voltage: Max. 220 V AC/DC
 Switching current: Max. 0.5 A AC/DC
 Switching capacity: Max. 50 VA
 Contact resistance : 400 mΩ or lower
 Terminal type : Screw terminal (M2.6 screw)
 Cable entry : G1/2 female thread
 Terminal box materials: Housing: Aluminum alloy (ADC12)
 Cover: Reinforced plastic (color: black)
 Terminal box painting: Melamine resin (color: black) [housing only]
 Protection class : IPX6

TERMINAL LAYOUT



FLOW RATE RANGE

■ Metal measuring tube (1)

Flow rate unit (m ³ /h)	Flow rate range code/flow rate scale (m ³ /h)														
	Scale type	15 mm		20 mm		25 mm		32 mm		40 mm		50 mm		65 mm	
0.3 to 1.5	01M	0.3 to 1.5	01M	0.3 to 1.5											
0.4 to 2	02M	0.4 to 2	02M	0.4 to 2											
0.5 to 2.5	03M	0.5 to 2.5	03M	0.5 to 2.5											
0.6 to 3	04M	0.6 to 3	04M	0.6 to 3	01M	0.6 to 3									
0.8 to 3.6					02M	0.8 to 3.6	01M	0.8 to 3.6	01M	0.8 to 3.6					
0.8 to 4					03M	0.8 to 4	02M	0.8 to 4	02M	0.8 to 4	01M	0.8 to 4			
1 to 4.6					04M	1 to 4.6	03M	1 to 4.6	03M	1 to 4.6	02M	1 to 4.6			
1 to 5					05M	1 to 5	04M	1 to 5	04M	1 to 5	03M	1 to 5			
1.2 to 6					06M	1.2 to 6	05M	1.2 to 6	05M	1.2 to 6	04M	1.2 to 6			
1.5 to 7							06M	1.5 to 7	06M	1.5 to 7	05M	1.5 to 7			
1.5 to 8							07M	1.5 to 8	07M	1.5 to 8	06M	1.5 to 8			
2 to 9									08M	2 to 9	07M	2 to 9			
2 to 10									09M	2 to 10	08M	2 to 10			
2.5 to 12									10M	2.5 to 12	09M	2.5 to 12	01M	2.5 to 12	
3 to 15											10M	3 to 15	02M	3 to 15	
4 to 20											11M	4 to 18	03M	4 to 20	
5 to 25														04M	5 to 25
6 to 30														05M	6 to 30
8 to 36														06M	8 to 36
Scale type	80 mm		100 mm		125 mm		150 mm		200 mm		250 mm		300 mm		
2.5 to 12	01M	2.5 to 12													
3 to 15	02M	3 to 15	01M	3 to 15											
4 to 20	03M	4 to 20	02M	4 to 20											
5 to 25	04M	5 to 25	03M	5 to 25											
6 to 30	05M	6 to 30	04M	6 to 30	01M	6 to 30									
8 to 36	06M	8 to 36	05M	8 to 36	02M	8 to 36									
8 to 40	07M	8 to 40	06M	8 to 40	03M	8 to 40	01M	8 to 40							
10 to 46	08M	10 to 46	07M	10 to 46	04M	10 to 46	02M	10 to 46							
10 to 50	09M	10 to 50	08M	10 to 50	05M	10 to 50	03M	10 to 50							
12 to 60			09M	12 to 60	06M	12 to 60	04M	12 to 60	01M	12 to 60					
15 to 70			10M	15 to 70	07M	15 to 70	05M	15 to 70	02M	15 to 70					
15 to 80			11M	15 to 80	08M	15 to 80	06M	15 to 80	03M	15 to 80	01M	15 to 80			
20 to 90			12M	20 to 90	09M	20 to 90	07M	20 to 90	04M	20 to 90	02M	20 to 90			
20 to 100			13M	20 to 100	10M	20 to 100	08M	20 to 100	05M	20 to 100	03M	20 to 100	01M	20 to 100	
25 to 120					11M	25 to 120	09M	25 to 120	06M	25 to 120	04M	25 to 120	02M	25 to 120	
30 to 150					12M	30 to 150	10M	30 to 150	07M	30 to 150	05M	30 to 150	03M	30 to 150	
40 to 200							11M	40 to 200	08M	40 to 200	06M	40 to 200	04M	40 to 200	
50 to 250									09M	50 to 250	07M	50 to 250	05M	50 to 250	
60 to 300									10M	60 to 300	08M	60 to 300	06M	60 to 300	
80 to 360									11M	80 to 360	09M	80 to 360	07M	80 to 360	
80 to 400									12M	80 to 400	10M	80 to 400	08M	80 to 400	
100 to 460									13M	100 to 460	11M	100 to 460	09M	100 to 460	
100 to 500											12M	100 to 500	10M	100 to 500	
120 to 600													11M	120 to 600	

■ Metal measuring tube (2)

Flow rate unit (L/min)	Flow rate range code/flow rate scale (L/min)													
Scale type	15 mm		20 mm		25 mm		32 mm		40 mm		50 mm		65 mm	
5 to 25	01L	5 to 25	01L	5 to 25										
6 to 30	02L	6 to 30	02L	6 to 30										
8 to 36	03L	8 to 36	03L	8 to 36										
8 to 40	04L	8 to 40	04L	8 to 40										
10 to 46	05L	10 to 46	05L	10 to 46										
10 to 50	06L	10 to 50	06L	10 to 50	01L	10 to 50								
12 to 60					02L	12 to 60	01L	12 to 60	01L	12 to 60				
15 to 70					03L	15 to 70	02L	15 to 70	02L	15 to 70	01L	15 to 70		
15 to 80					04L	15 to 80	03L	15 to 80	03L	15 to 80	02L	15 to 80		
20 to 90					05L	20 to 90	04L	20 to 90	04L	20 to 90	03L	20 to 90		
20 to 100					06L	20 to 100	05L	20 to 100	05L	20 to 100	04L	20 to 100		
25 to 120							06L	25 to 120	06L	25 to 120	05L	25 to 120		
30 to 150									07L	30 to 150	06L	30 to 150		
40 to 200									08L	40 to 200	07L	40 to 200	01L	40 to 200
50 to 250											08L	50 to 250	02L	50 to 250
60 to 300											09L	60 to 300	03L	60 to 300
80 to 360													04L	80 to 360
80 to 400													05L	80 to 400
100 to 460													06L	100 to 460
100 to 500													07L	100 to 500
120 to 600													08L	120 to 600
Scale type	80 mm		100 mm		125 mm		150 mm		200 mm		250 mm		300 mm	
40 to 200	01L	40 to 200												
50 to 250	02L	50 to 250	01L	50 to 250										
60 to 300	03L	60 to 300	02L	60 to 300										
80 to 360	04L	80 to 360	03L	80 to 360										
80 to 400	05L	80 to 400	04L	80 to 400										
100 to 460	06L	100 to 460	05L	100 to 460										
100 to 500	07L	100 to 500	06L	100 to 500	01L	100 to 500								
120 to 600	08L	120 to 600	07L	120 to 600	02L	120 to 600								
150 to 700	09L	150 to 700	08L	150 to 700	03L	150 to 700	01L	150 to 700						
150 to 800	10L	150 to 800	09L	150 to 800	04L	150 to 800	02L	150 to 800						
200 to 900			10L	200 to 900	05L	200 to 900	03L	200 to 900						
200 to 1000			11L	200 to 1000	06L	200 to 1000	04L	200 to 1000	01L	200 to 1000				
250 to 1200			12L	250 to 1200	07L	250 to 1200	05L	250 to 1200	02L	250 to 1200				
300 to 1500			13L	300 to 1500	08L	300 to 1500	06L	300 to 1500	03L	300 to 1500	01L	300 to 1500		
400 to 2000					09L	400 to 2000	07L	400 to 2000	04L	400 to 2000	02L	400 to 2000	01L	400 to 2000
500 to 2500					10L	500 to 2500	08L	500 to 2500	05L	500 to 2500	03L	500 to 2500	02L	500 to 2500
600 to 3000							09L	600 to 3000	06L	600 to 3000	04L	600 to 3000	03L	600 to 3000
600 to 3600									07L	600 to 3600	05L	600 to 3600	04L	600 to 3600
800 to 4000									08L	800 to 4000	06L	800 to 4000	05L	800 to 4000
1000 to 4600									09L	1000 to 4600	07L	1000 to 4600	06L	1000 to 4600
1000 to 5000									10L	1000 to 5000	08L	1000 to 5000	07L	1000 to 5000
1200 to 6000									11L	1200 to 6000	09L	1200 to 6000	08L	1200 to 6000
1500 to 7000									12L	1500 to 7000	10L	1500 to 7000	09L	1500 to 7000
1500 to 8000											11L	1500 to 8000	10L	1500 to 8000
2000 to 9000													11L	2000 to 9000

■ PVC measuring tube

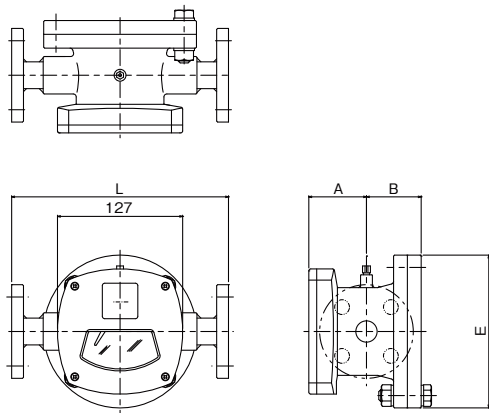
Flow rate unit (m³/h)	Flow rate range code/flow rate scale (m³/h)							
Scale type	25 mm		40 mm		50 mm		65 mm	
0.6 to 3	01M	0.6 to 3						
0.8 to 3.6	02M	0.8 to 3.6	01M	0.8 to 3.6				
0.8 to 4	03M	0.8 to 4	02M	0.8 to 4	01M	0.8 to 4		
1 to 4.6	04M	1 to 4.6	03M	1 to 4.6	02M	1 to 4.6		
1 to 5	05M	1 to 5	04M	1 to 5	03M	1 to 5		
1.2 to 6			05M	1.2 to 6	04M	1.2 to 6		
1.5 to 7			06M	1.5 to 7	05M	1.5 to 7		
1.5 to 8			07M	1.5 to 8	06M	1.5 to 8		
2 to 9			08M	2 to 9	07M	2 to 9		
2 to 10			09M	2 to 10	08M	2 to 10		
2.5 to 12					09M	2.5 to 12	01M	2.5 to 12
3 to 15							02M	3 to 15
4 to 20							03M	4 to 20
5 to 25							04M	5 to 25
6 to 30							05M	6 to 30

Flow rate unit (L/min)	Flow rate range code/flow rate scale (L/min)							
Scale type	25 mm		40 mm		50 mm		65 mm	
10 to 46	01L	10 to 46						
10 to 50	02L	10 to 50						
12 to 60	03L	12 to 60	01L	12 to 60				
15 to 70	04L	15 to 70	02L	15 to 70				
15 to 80	05L	15 to 80	03L	15 to 80	01L	15 to 80		
20 to 90			04L	20 to 90	02L	20 to 90		
20 to 100			05L	20 to 100	03L	20 to 100		
25 to 120			06L	25 to 120	04L	25 to 120		
30 to 150			07L	30 to 150	05L	30 to 150		
40 to 200			08L	40 to 200	06L	40 to 200	01L	40 to 200
50 to 250							02L	50 to 250
60 to 300							03L	60 to 300
80 to 360							04L	80 to 360
80 to 400							05L	80 to 400
100 to 460							06L	100 to 460
100 to 500							07L	100 to 500
120 to 600							08L	120 to 600

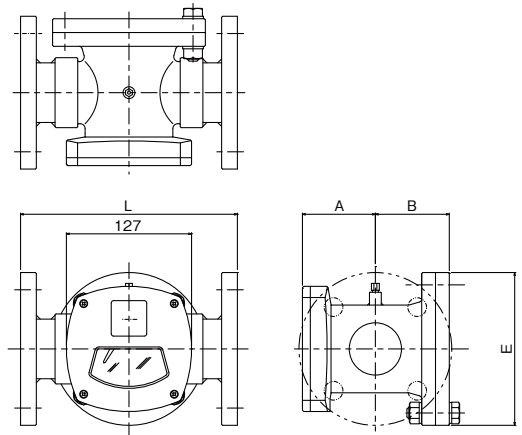
DIMENSIONS

● STK2000 (local indication type) metal measuring tube

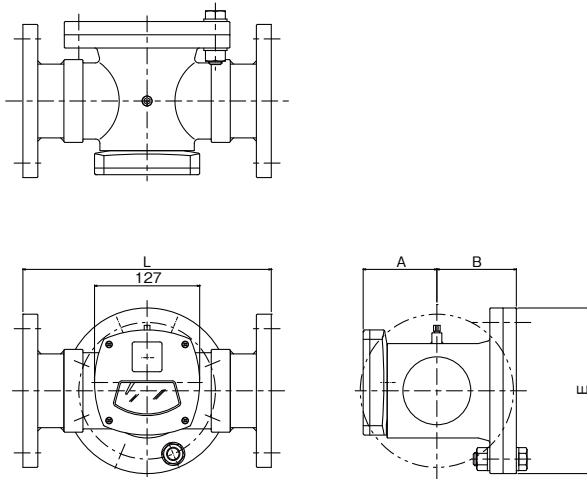
Meter size: 15 mm, 20 mm



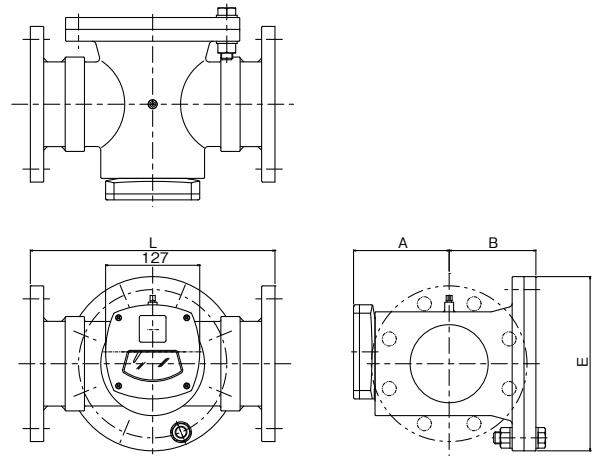
Meter size: 25 to 50 mm



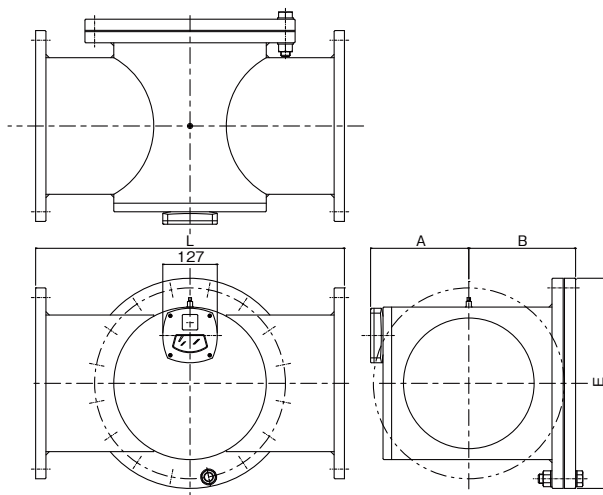
Meter size: 65 mm, 80 mm



Meter size: 100 mm



Meter size: 125 to 300 mm



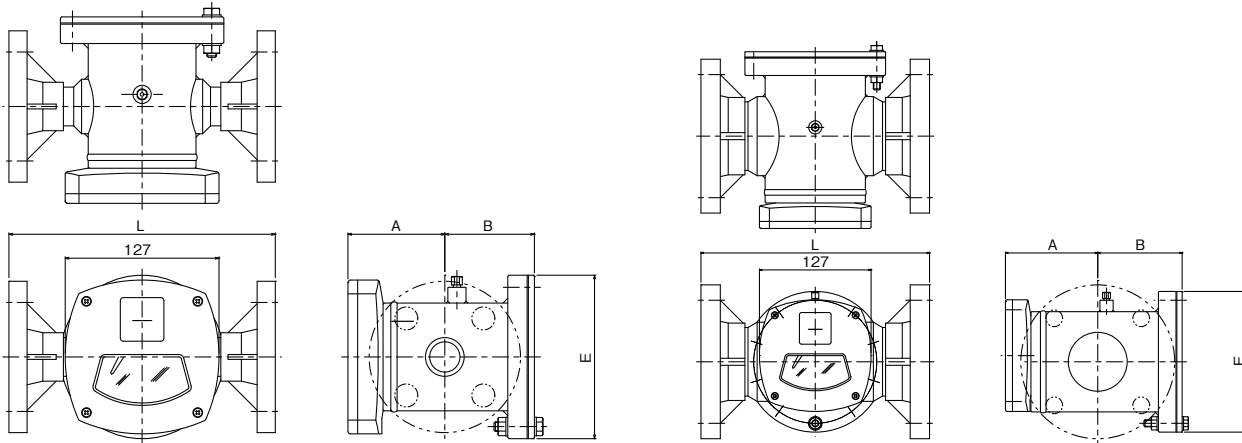
Meter size	Size (mm)			Mass (Approx.) kg	MAX. Press. loss (Approx.) kPa
	L: Face-to-face	A	B		
15 mm	220	59	55.5	7	12
20 mm	220	59	55.5	7	12
25 mm	220	64	60	8	17
32 mm	220	64	65	9	8
40 mm	220	69	70	9	12
50 mm	220	74	75	10	12
65 mm	260	84	92	16	25
80 mm	300	89	97	17	26
100 mm	330	129	117	25	33
125 mm	380	129	129	33	35
150 mm	480	159	150	58	25
200 mm	650	179	192	84	58
250 mm	680	204	212	123	28
300 mm	720	229	244	153	18

* Refer to the pressure loss table in the instruction manual for detailed values.

● STK2000 (local indication type) PVC measuring tube

Meter size: 25 to 50 mm

Meter size: 65 mm



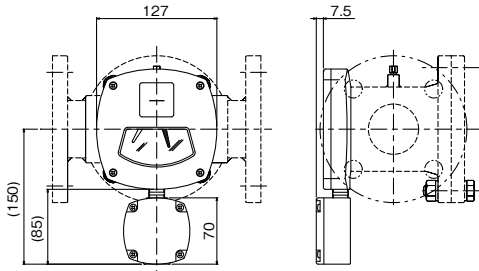
Meter size	Size (mm)			Mass (Approx.) kg	* MAX. Press. loss (Approx.) kPa
	L: Face-to-face	A	B		
25 mm	220	80	74	2.6	12
40 mm	220	85	79	3.0	12
50 mm	220	89	83	3.3	5
65 mm	260	105	96	5.0	25

* Refer to the pressure loss table in the instruction manual for detailed values.

● STK7400 (local indication + alarm contact) indicator

• Alarm 1-point contact

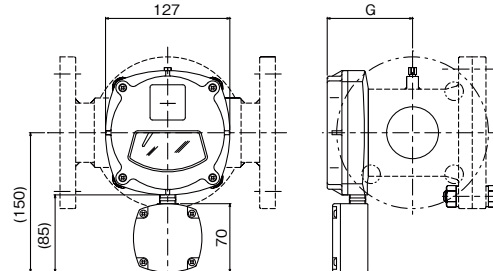
Flow direction
: Left to Right, Bottom to Top, Top to Bottom



Flow direction →

• Alarm 2-points contact

Flow direction
: Left to Right, Bottom to Top, Top to Bottom

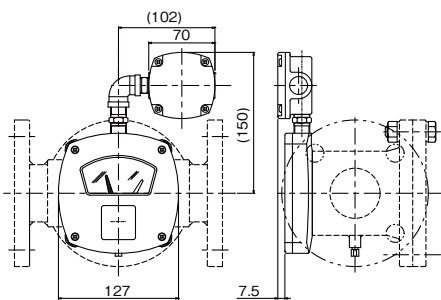


Flow direction →

Meter size	G size (mm)	
	Metal	PVC
15 mm	72	—
20 mm	72	—
25 mm	77	93
32 mm	77	—
40 mm	82	98
50 mm	87	102
65 mm	97	118
80 mm	102	—
100 mm	142	—
125 mm	142	—
150 mm	172	—
200 mm	192	—
250 mm	217	—
300 mm	242	—

• Alarm 1-point contact

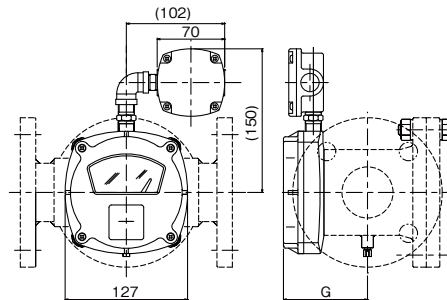
Flow direction: Right to Left



← Flow direction

• Alarm 2-points contact

Flow direction: Right to Left



← Flow direction

* The dimensions of the measuring tube and the maximum pressure loss of the STK7400 (local indication + alarm contact) are the same as those of the STK2000 (local indication type).

MODEL CODE

■ Metal measuring tube

STK	***	*	-	*	-	***	-	***	-	**	-	*	-	*	/	**	*	*	Specifications			
Function	200																		Local indication			
	740																		Local indication + alarm contact			
Flow direction	1																		Bottom to Top			
	6																		Left to Right			
	7																		Right to Left			
	8																		Top to Bottom			
Main body material (wetted part)	- S																		Iron-based material			
	- 4																		Stainless steel			
Meter size	- 015																		15 mm			
	- 020																		20 mm			
	- 025																		25 mm			
	- 032																		32 mm			
	- 040																		40 mm			
	- 050																		50 mm			
	- 065																		65 mm			
	- 080																		80 mm			
	- 100																		100 mm			
	- 125																		125 mm			
	- 150																		150 mm			
	- 200																		200 mm			
- 250																		250 mm				
- 300																		300 mm				
Flow rate range	- 01M																		Range 1	m ³ /h	See flow rate range code of metal measuring tube (1) in FLOW RATE RANGE.	
	- 02M																		Range 2			
	- 03M																		Range 3			
	- 04M																		Range 4			
	- 05M																		Range 5			
	- 06M																		Range 6			
	- 07M																		Range 7			
	- 08M																		Range 8			
	- 09M																		Range 9			
	- 10M																		Range 10			
	- 11M																		Range 11			
	- 12M																		Range 12			
	- 13M																		Range 13			
	- 01L																		Range 1	L/min	See flow rate range code of metal measuring tube (2) in FLOW RATE RANGE.	
	- 02L																					Range 2
	- 03L																					Range 3
	- 04L																					Range 4
	- 05L																					Range 5
	- 06L																					Range 6
	- 07L																					Range 7
	- 08L																					Range 8
	- 09L																					Range 9
	- 10L																					Range 10
	- 11L																					Range 11
	- 12L																					Range 12
	- 13L																					Range 13
Process connection	- 1F																		JIS10K FF flange			
	- 1A																		ASME class 150 RF flange			
Packing material (for back cover)	- N																		NBR			
	- F																		FPM			
	- E																		EPDM			
	- P																		PTFE			
Material of nuts and bolts (for back cover)	- S																		Carbon steel			
	- 4																		Stainless steel			
Alarm contact	A: H limit CLOSE (ON) B: H limit OPEN (OFF) C: L limit CLOSE (ON) D: L limit OPEN (OFF)	For desired specifications, enter letters A to D into the * part of the code.														/ 00		No alarm contact (STK2000: with local indication only)				
																		/ *0		1-point alarm	Example: D0 for L limit OPEN	
																		/ **		2-points alarm	Example: AB for H limit CLOSE, HH limit OPEN	
Special specifications																(Blank)		Without				
																/ Z		With special request				

■ PVC measuring tube

STK	***	*	-	P	-	***	-	***	-	1F	-	F	-	4	/	**	*	*	Specifications		
Function	200																		Local indication		
	740																		Local indication + alarm contact		
Flow direction	1																		Bottom to Top		
	6																		Left to Right		
	7																		Right to Left		
	8																		Top to Bottom		
Main body material (wetted part)				-	P														PVC		
Meter size						-	025												25 mm		
						-	040												40 mm		
						-	050												50 mm		
						-	065												65 mm		
Flow rate range						-	01M												Range 1	m ³ /h	See flow rate range code of PVC measuring tube in FLOW RATE RANGE.
						-	02M												Range 2		
						-	03M												Range 3		
						-	04M												Range 4		
						-	05M												Range 5		
						-	06M												Range 6		
						-	07M												Range 7		
						-	08M												Range 8		
						-	01L												Range 1	L/min	
						-	02L												Range 2		
						-	03L												Range 3		
						-	04L												Range 4		
						-	05L												Range 5		
						-	06L												Range 6		
						-	07L												Range 7		
						-	08L												Range 8		
Process connection						-	1F												JIS10K FF flange		
Packing material (for back cover)						-	F												FPM		
Material of nuts and bolts (for back cover)						-	4												Stainless steel		
Alarm contact	A: H limit CLOSE (ON)		For desired specifications, enter letters A to D into the * part of the code.		/	00													No alarm contact (STK2000: with local indication only)		
	B: H limit OPEN (OFF)				/	*0													1-point alarm	Example: D0 for L limit OPEN	
	C: L limit CLOSE (ON)				/	**													2-points alarm	Example: AB for H limit CLOSE, HH limit OPEN	
Special specifications	(Blank)															Without					
	/ Z															With special request					

PRECAUTIONS

- Make sure to flush the piping before mounting this product in order to eliminate any residue in the piping.
- Avoid sudden valve operations. In particular, if the valve is opened quickly at the start of operation, it causes excessive fluid to flow, which may result in failure or damage of the internal flapper and other parts.
- For the STK7400 (with alarm contact), take measures to keep out water, such as applying waterproof tape on the cable entry of the terminal box.

* Specification is subject to change without notice.


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