

AS-1000 Series

SLURRY FLOWMETER

■ OUTLINE

AS-1000 Series are the metal tube flowmeters, and these series have been mainly developed for the purpose of slurry measurement. The structure of float and float part have the feature to make the solid passed easily. Accordingly, it is most suitable to make measurement of the liquid containing the fibrous tissue, granular foreign substance etc.

Moreover, in addition to the standard stainless steel, PVC material is also available, which is suitable to the high corrosive plating drainage and so on.

And the highly reliable local indicators, pneumatic transmitters, electric transmitters, integrator with scaled pulse output as well as alarm contact output versions are also provided to comply with any applications.

■ STANDARD SPECIFICATION

- Measuring fluid : Slurry liquid
- Available size (Meter size) : 15 to 150

• Functions

AS-140□	AS-131□	AS-152□	AS-169□	AS-174□
Location indication	Location indication Pneumatic transmission	Location indication Electric transmission	Location indication Local integration Pulse output	Location indication Alarm output

- Material : Carbon steel, SUS304, SUS316, SUS316L and PVC
On request Other metallic material
- Pressure rating : 150lbs (JIS10K) class,
300lbs (JIS20K) class
On request For high pressure
(Consult factory for details)
- Connection : Flange connection
On request Screw connection
(Consult factory for details)

General purpose	AS-1□□□-□ (Std.) JIS10KFF	ANSI and DIN flange are also available
Medium pressure class	AS-1□□□-M (Std.) JIS20KRF	
High pressure class	AS-1□□□-H	Consult factory for details

• Fluid pressure (Except PVC material)

	General purpose 150lbs (10K) class AS-1□□□			Medium pressure 300lbs (20K) class AS-1□□□-M				
	~120	~220	~300	~120	~220	~300	~350	~400
Fluid temp. °C								
Max. fluid press. MPa	1.4	1.2	1.0	3.4	3.1	2.9	2.6	2.3

Consult factory for High pressure version



- Fluid temperature : (With a transmitter, when ambient temperature exceeds a specified value, take a heat insulation etc.)

Model	AS-1□□1	AS-1□□2	AS-1□□2-F
Max. fluid temp. ³	200°C ¹	149°C	400°C ²

¹ Up to 250°C possible on request

² Max. 300°C for general purpose 150lbs (10K) class

³ PVC : 60°C (Max.)

• Size limit of solid contained in measuring fluid (mm)

Meter size	15	20	25	40	50	65	80	100	125	150
Size Ø	0.01	0.15	0.2	0.3	0.5	0.8	1.0	1.0	1.0	1.0

- Flow direction : Bottom to Top, Bottom to Top side
- Indication accuracy : ±1.5% F.S. (±2.0% F.S. for PVC material version)
On request Consult factory for details
- Standard scale length : 75mm
- Range ability : 10:2
- Indicator construction: Dust- and splash-proof (IP54 equ.)

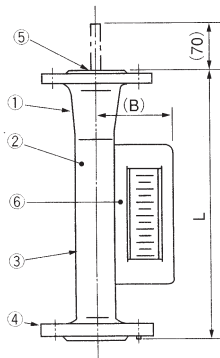
MODEL CODE

MODEL CODE						Description	
-AS-1						Waterproof	
Construction ^{*1}	EP					Flameproof	
	IS					Intrinsically safe	
						Local indication	
Function		40				Local indication + Pneumatic transmission	
		31				Local indication + Electric transmission	
		52				Local indication + Local integration + Pulse output	
		69				Local indication + Alarm output	
		74					
Flow direction		1				Bottom to Top	
		2				Bottom to Top side	
Jacket						Without jacket	
		JS				Semi jacket	
		JF				Full jacket	
Pressure rating						General purpose 150lbs (10K) class	
		M				Medium purpose 300lbs (20K) class	
		H				High pressure	

*1 : Intrinsically safe version is available for AS-1740 series.

DIMENSIONS, MATERIAL, PRESS.DROP AND FLOW RATE

- AS-1□□1 (Flow direction : Bottom to Top, Material : Metal, Without jacket)



Meter size	Flow rate water (m³/h)	Pressure loss (kPa)	150lbs (10K) class AS-□□□-□			300lbs (20K) class AS-1□□□-□		
			L(mm)	B(mm)	Mass (approx.)	L (mm)	B(mm)	Mass (approx.)
15	0.1~0.7 (0.7)	6.5	350	89	5	350	89	5
20	1.5 (1.5)	6.0	350	89	5	400	89	6
25	3.9 (3.6)	7.3	350	92	6	400	92	7
40	7.5 (6.8)	9.0	400	99	8	400	99	9
50	15.1 (13.5)	6.3	400	105	10	450	105	12
65	27.5 (26.5)	7.8	450	113	13	500	113	18
80	40.5 (37.5)	9.1	450	120	15	500	120	20
100	75 (65)	12.0	450	132	20	500	132	28
125	110 (-)	14.0	500	145	32	-	-	-
150	150 (-)	18.0	500	158	50	-	-	-

*Inside of () is the flow rate of 20K class

Note

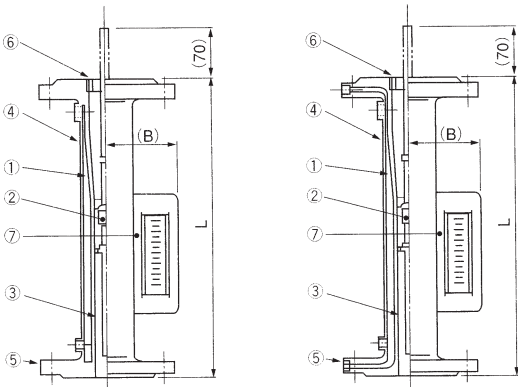
Float rod comes out by 70mm during operation in metersizes 20 to 150.

- Connection size is the same as meter size, or +1 size up.

No.	Description	Class 1	Class 2	Class 3	Class 4
1	Taperd tube	SUS304	SUS304	SUS316	SUS316L
2	Float ass'y	SUS304	SUS304	SUS316	SUS316L
3	Lower body	SUS304	SUS304	SUS316	SUS316L
4	Flange	SS400	SUS304	SUS316	SUS316L
5	Float guide	SUS304	SUS304	SUS316	SUS316L
6	Indicator	ADC12	ADC12	ADC12	ADC12

*Other special metallic material available on request

- AS-1□□1-JS, AS-1□□1-JF (Material: Metal, With jacket)



Meter size	Flow rate water (m³/h)	Pressure loss (kPa)	150lbs (10K) class AS-□□□-□			300lbs (20K) class AS-□□□-M		
			L(mm)	B(mm)	Mass (approx.)	L(mm)	B(mm)	Mass (approx.)
15	0.1~0.7	6.5	350	93	6	350	93	6
20	1.5	6.0	400	93	6	400	93	7
25	3.6	7.3	400	96	7	400	96	8
40	6.8	9.0	400	103	10	400	103	11
50	13.5	6.3	450	113	12	450	113	14
65	26.5	7.8	500	120	16	500	120	21
80	37.5	9.1	500	126	18	500	126	23
100	65	12.0	500	145	25	500	145	33
125	100	14.0	500	158	38	-	-	-
150	140	18.0	500	171	60	-	-	-

No.	Description	Class 1	Class 2	Class 3	Class 4
1	Taped tube	SUS304	SUS304	SUS316	SUS316L
2	Float ass'y	SUS304	SUS304	SUS316	SUS316L
3	Body	SUS304	SUS304	SUS316	SUS316L
4	Jacket pipe	SUS304	SUS304	SUS304	SUS304
5	Flange	SS400	SUS304	SUS316	SUS316L
6	Float guide	SUS304	SUS304	SUS316	SUS316L
7	Indicator	ADC12	ADC12	ADC12	ADC12

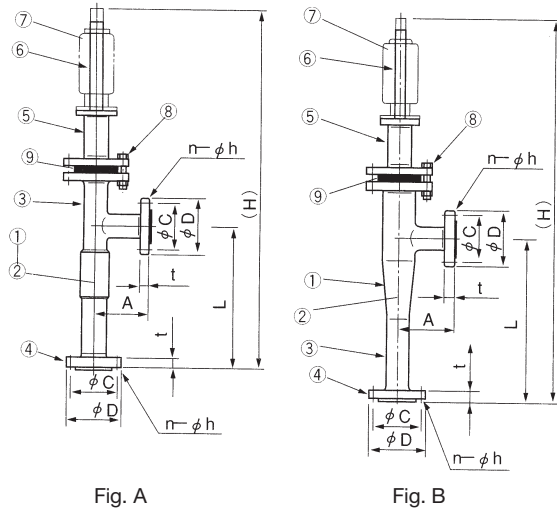
*Other special metallic material available on request

Note

Float rod comes out by 70mm during operation in meter sizes 20 to 150.

- Connection size is the same as meter size, or +1 size up.

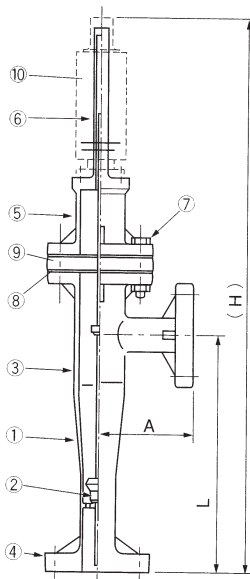
● AS-1□□2 (Flow direction: Bottom to Top side, Material: Metal)



Meter size	Flow rate water (m ³ /h)	Dimensions			Mass (approx.)	Fig.
		L(mm)	A(mm)	(H)(mm)		
15	0.1~0.75	250	100	770	9	A
20	1.7	250	100	790	9	B
25	4.2	250	100	790	11	B
40	7.5	250	100	840	13	B
50	15	250	100	860	17	B
65	29.5	350	150	940	24	B
80	40	350	150	990	28	B
100	67	350	150	1010	46	B
125	110	370	250	1030	59	B
150	150	480	250	1140	80	B

No.	Description	Class 1	Class 2	Class 3
①	Taped tube	SUS304	SUS304	SUS316
②	Float ass'y	SUS304	SUS304	SUS316
③	Body	SGP	SUS304	SUS316
		STPG370		
④	Flange	SS 400	SUS304	SUS316
⑤	Chamber	SS 400/SGP	SUS304	SUS316
⑥	Lead pipe	SUS304	SUS304	SUS316
⑦	Case	ADC12	ADC12	ADC12
⑧	Bolt and nut	SS 400	SS 400	SS 400
		SUS304	SUS304	SUS304
⑨	Packing	Non-asbestos	Non-asbestos	Non-asbestos
		PTFE	PTFE	PTFE

● AS-1□□2 (Flow direction: Bottom to Top side, Material: PVC)



Meter size	Flow rate water (m ³ /h)	Pressure loss (kPa)	Connection size	Dimensions			Mass (approx.)
				L(mm)	A(mm)	(H)(mm)	
15	—	—	—	—	—	—	—
20	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—
40	2~5	7.5	25A(1")	350	130	940	*1
			40A(1 1/2")	390	120	960	
			50A(2")	400	130	970	
50	15	15.0	40A(1 1/2")	450	150	1070	*1
			50A(2")	460	150	1070	
			65A(2 1/2")	460	150	1070	
65	—	—	—	—	—	—	
80	30	12.0	65A(2 1/2")	500	200	1170	*1
			80A(3")	460	180	1130	
			100A(4")	500	220	1170	
100	40	9.0	80A(3")	550	230	1300	*1
			100A(4")	550	250	1300	
			125A(5")	600	250	1350	
125	—	—	—	—	—	—	
150	70	9.0	100A(4")	650	300	1490	*1
			125A(5")	650	300	1490	
			150A(6")	650	300	1490	

*1: Consult us for details.

The correlation table of maximum pressure and the maximum temperature in PVC

Meter size : 40 to 100mm

Temp. (°C)	Press.(MPa)
20	0.5
30	0.451
40	0.394
50	0.337
60	0.271

Meter size : 150mm

Temp. (°C)	Press.(MPa)
20	0.3
30	0.271
40	0.236
50	0.202
60	0.163

No.	Description	Material
①	Taped tube	PVC
②	Float ass'y	PVC
③	Body	PVC
④	Flange	PVC
⑤	Chamber	PVC
⑥	Lead pipe	PVC
⑦	Bolt and nut	SS400 or SUS304
⑧	Packing	NBR or EPDM
⑨	Cover board	PVC
⑩	Indicator	ADC12

SPECIFICATION OF TRANSMITTER

● AS-131-□ Local indication + Pneumatic output type

Air supply	: 0.14±0.01 MPa
Outputs	: 20 – 100 kPa (with output gauge)
Air consumption	: 14 L/min (nor)
Construction	: Rc 1/4 On request NPT 1/4
Output accuracy	: ±1.0% F.S. (Against flow calibration)
Construction	: Dust- and splash-proof (IP 54 equ.)
Ambient temp	: -20 to 80°C Provide heat insulation if required.
Accessory	: Air set (On request)

● AS-152-□ Local indication + Electric output type

Power supply	Watertight and flame proof : 12 to 30 V DC
Outputs	: 4 to 20 mA DC
Max. load	Watertight and flame proof : 600Ω (24 V DC)
Cable entry	: 2-G 1/2 (1/2NPT as option) For wiring work to satisfy TIIS certification, use an optional cable gland (Type SXC-16B, Shimada Electric) [cables with a diameter of 8 mm to 12 mm (standard: 10 mm to 12 mm)].
Output accuracy	: ±1.0% F.S. (Against flow calibration)
Transmitter enclosure	Non-explosion-proof (IP54 equ.) type AS-152-□ Flameproof (Exd II BT4) type EP-AS-152-□ Option (Exd II CT4) type EP-AS-152-□
Ambient temp	Non-explosion-proof : -30 to 70°C Flameproof enclosure : Exd II BT4 -20 to 55°C : Exd II CT4 -20 to 55°C Provide heat insulation if required.

● AS-169-□ Local indication + Totalization + Scaled Pulse output type

Integration	: 6 digit with reset
Count rate	: 50 to 2000 c/h
Pulse output	: Open collector output Pulse width 100 ms, Rating 35 V DC, 50 mA (Signal circuit and power supply circuit are isolated.)

Integration accuracy	: ±2.0%F.S. (Against flow calibration)
Power supply	: 100 V AC, 50/60Hz Other voltage on request
Power consumption	: Max. 5 VA
Cable entry	: G 1/2 [TIIS cable gland with flameproof gasket is available on request. Cable diameter: 7 mm to 12 mm (standard: 11 mm to 12 mm)] On request : NPT 1/2
Transmitter enclosure	: Non-explosion-proof (IP 54 equ.) type AS-169-□ Flameproof (JISd2G4) type EP-AS-169-□
Ambient temp	: -20 to 80°C for type AS-169-□ -10 to 60°C for type EP-AS-169-□ Provide heat insulation if required

● AS-174-□ Local indicator + Alarm Contact(s) type

Alarm point	: 1 point high alarm or 1point low alarm or 2 points high and low
Switch	: Micro switch SPDT
Rating	: Standard 125/250 V AC, 5 A On request 30 V DC, 0.1 A
Setting accuracy	: ±2% 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) In case of Explosion proof version, less than 30% (F.S.) (Against flow calibration)
Cable entry	: G 1/2 [TIIS cable gland with flameproof gasket is available on request. Cable diameter: 7 mm to 12 mm (standard: 11 mm to 12 mm)] On request : NPT 1/2
Enclosure	Non-explosion-proof (IP 54 equ.) type AS-174-□ Flameproof (JISd2G4) type EP-AS-174-□ Intrinsically safe (JIS i3nG5) type IS-AS-174-□* *Supplied with safety barrier
Ambient temp	: -25 to 80°C for type AS-174-□ -10 to 60°C for type EP-AS-174-□ and IS-AS-174-□ Provide heat insulation if required

* Specification is subject to change without notice.

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