



ABDT-LZB Glass tube Rotameter

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I. Product Overview

ABDT-LZB Series Variable-area Flow meter mainly applies to areas like chemistry, oil industry, light industry, medicine, chemical fertilizer industry, food industry, dye industry, environmental protection, and scientific research. They are used to measure the flow rate of unidirectional non-impulse fluid (liquid or gas).

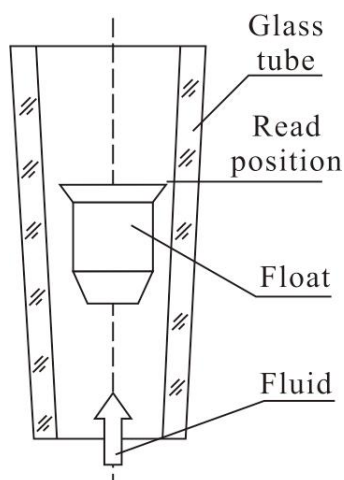


Corrosion resistance flow meter are mostly applied in cases of corrosive liquid and gas, such as strong acid (except for hydrofluoric acid), strong alkali, oxidizer, strong oxidizing acid and organic solvent.

II. Characteristics

- 1) Small pressure loss
- 2) Reliable performance, easy and convenient to read
- 3) Simple structure, convenient to install and serviced
- 4) Low and reasonable price

III. Principles and Structures



The most important measuring component of flowmeter is a vertical-installed tapered glass pipe with a floater that is free to move up and down. When fluid moves through the flowmeter from bottom to top, pressure difference will be generated between the fluid above the floater and the fluid below it, under which the float will ascend. When this ascending force, the buoyancy force and viscosity force equal the gravity of the float, the float will stop at this equilibrium position. Therefore, the flow rate through the flow meter is relevant to the height of the float

and the cutting area of the flow meter. So the position of the float can be used to indicate the flow rate.

IV. Model Specifications and Technique Data

4.1 Ordinary type

ABDT-LZB -2	ABDT-LZB -3	Model			ABDT-LZB -4	ABDT-LZB -6	ABDT-LZB -10
ϕ 2	ϕ 3	Diameter(mm)			ϕ 4	ϕ 6	ϕ 10
≤1	≤1	Working pressure (MPa)			≤1	≤1	≤1
±4	±4	Accuracy(%FS)			±4	±2.5	±2.5
1:10	1:10	Range ability			1:10	1:10	1:10
0.4-4	2.5-25	Liquid ml/min	Measuring Range	Liquid l/h	1-10	2.5-25	6-60
0.6-6	4-40						
1-10	6-60				1.6-16	4-40	10-100
					2.5-25	6-60	16-160
1.6-16	10-100						
6-60	40-400	Air ml/min		Air l/h	16-160	40-400	100-1000
10-100	60-600				25-250	60-600	160-1600
16-160	100-1000				40-400	100-1000	250-2500
25-250	160-1600						

Notes:

1) The above flow meter with (DN 2-10mm) is side to side, hose, or threaded connection, bottom substrate is with aciculiform flow control valve. DN ≥ 15 mm is flange, vertically installed, without valve.

Model	ABDT-LZB -15	ABDT-LZB -25	ABDT-LZB -40	ABDT-LZB -50	ABDT-LZB -80	ABDT-LZB -100
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Diameter (mm)		Φ 15	Φ 25	Φ 40	Φ 50	Φ 80	Φ 100
Working pressure (MPa)		≤0.6	≤0.6	≤0.6	≤0.6	≤0.4	≤0.4
Accuracy(%FS)		±2.5	±1.5	±1.5	±1.5	±1.5	±1.5
Range ability		1:10	1:10	1:10	1:10	1:10; 1:5	1:5
Measuring Range	Liquid	0.016-0.16	0.04-0.4	-	0.4-4	1-10	5-25
		0.025-0.25	0.06-0.6	0.16-1.6	0.6-6	1.6-16	8-40
	m ³ /h	0.04-0.4	0.1-1	0.25-2.5	1-10 (special)	7-30 (special)	12-60 (special)
		0.25-2.5	1-10	4-40	10-100	50-250	120-600
	Air	0.4-4.0	1.6-16	6-60	16-160	80-400	200-1000
		0.6-6.0	2.5-25	-	-	-	-

Notes:

1) liquid flow of LZB Series variable-area flow meter is calibrated in the circumstance of 20°C water, gas flow is calibrated in the circumstance of 20°C, 101325Pa Air

2) According to the customer's needs, special flow meter can also be made. The biggest water flow of DN100 can be 120 m³ /h, the biggest gas flow can be 3500 m³ /h, special density correction calibration and pressure correction calibration based on specific operation can also be made.

4.2 Corrosion resistance type

Model		ABDT-LZB -15F	ABDT-LZB -25F	ABDT-LZB -40F	ABDT-LZB -50F	ABDT-LZB -80F	ABDT-LZB -100F
Diameter(mm)		Φ 15	Φ 25	Φ 40	Φ 50	Φ 80	Φ 100
Working pressure (MPa)		≤0.6	≤0.6	≤0.6	≤0.6	≤0.4	≤0.4
Accuracy(%FS)		±4	±2.5	±2.5	±2.5	±2.5	±2.5
Range ability		1:10	1:10	1:10	1:10	1:10; 1:5	1:5
Measuring Range	Liquid	0.016-0.16	0.04-0.4	-	-	-	-
		0.025-0.25	0.06-0.6	0.16-1.6	0.4-4	1-10	5-25
		0.04-0.4	0.1-1	0.25-2.5	0.6-6	1.6-16	8-40
	Air	0.25-2.5	1-10	-	-	-	-
		0.4-4	1.6-16	4-40	10-100	50-250	120-600

		0.6-6	2.5-25	6-60	16-160	80-400	200-1000
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Notes:

- 1). Corrosion resistance type with $DN \leq 10$ mm can be custom made, generally without aciculiform control valve.
- 2). The Corrosion resistance flow meter with higher precision can be custom made.

V. Flow Meter and Materials Contacting Measured Medium

5.1 Ordinary type

ABDT-LZB-2 ABDT-LZB-3 ABDT-LZB-4 ABDT-LZB-6 ABDT-LZB-10			
Substrate & valve needle	Stop shaft	Floater	Stuffing box packing
Chromium plated brass	PTFE	agate ball or (304) stainless steel	Acid-proof alkali rubber(1V-1)
ABDT-LZB-15 ABDT-LZB-25 ABDT-LZB-40			
Flange	Stop shaft	Floater or guide rod	Stuffing box packing
Cast iron lining Acid-proof alkali	PTFE	(304) stainless steel	Acid-proof alkali rubber(1V-1)
Rubber(IV-1)			
ABDT-LZB-50 ABDT-LZB-80 ABDT-LZB-100			
Flange	Stop shaft	Floater or guide rod	Stuffing box packing
Amino baking paint inside cast iron	Amino baking paint inside cast iron	(304) stainless steel	Acid-proof alkali rubber(1V-1)

Notes: All the material of diameter flow meter's tapered glass pipe is HBG (Same below)

5.2 Stainless steel type ABDT-LZB-□□ B or ABDT-LZB-□□ B0

Flange, Substrate, valve, floater, guide rod, base plate, housing or bolt are all stainless steel, Model: ABDT-LZB-□ □ B. $DN \leq 10$ mm, stainless over current material can be 316L Stainless, Model: ABDT-LZB-2-10B0, can be custom made.

5.3 Corrosion resistance type ABDT-LZB-□□ F or ABDT-LZB-□□ F/B

DN 2-10 adopts PTFE Substrate, DN 15-100 adopts cast iron flange lining PTFE, Model: ABDT-LZB-□□ F; Corrosion-resistant floats adopt agate balls or PTFE, with seals made of

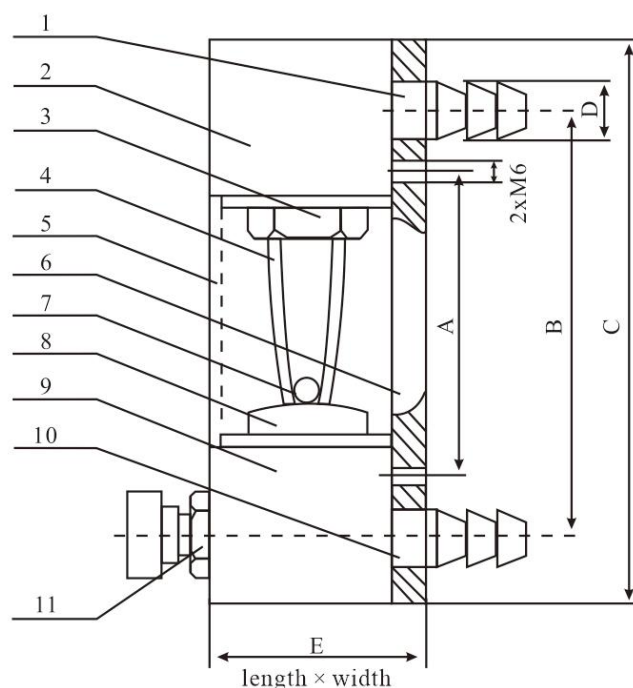
fluororubber or PTFE hard seals, suitable for DN2 to DN10.

If DN15-100 adopts stainless flange lining PTFE, then it can be stainless corrosion resistance type. Model ABDT-LZB-□□ F/B, needs to be custom made.

VI. Configuration and Size

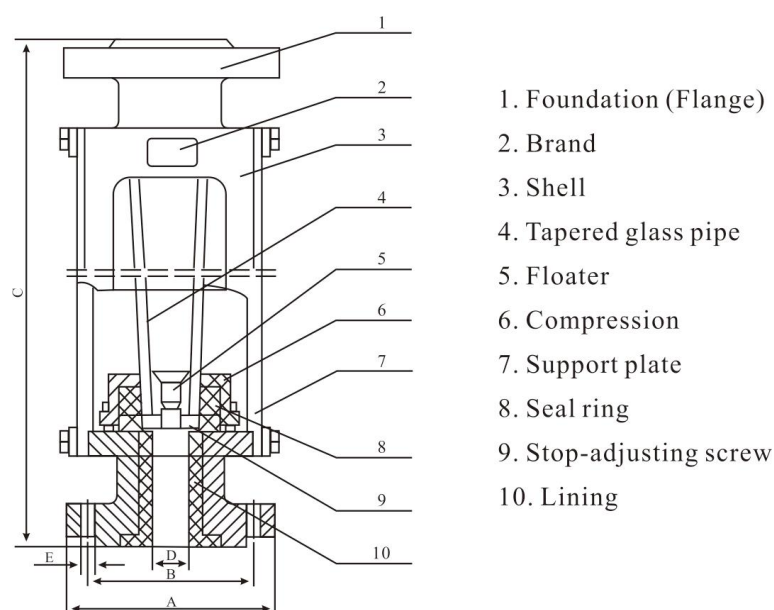
6.1 Nominal diameter DN2,3,4,6,10

1. Outflow
2. Up foundation
3. Up compression
4. Tapered glass tube
5. Organic glass shell
6. Support plate
7. Floater
8. Down compression
9. Down foundation
10. Inflows
11. Needle valve



Diameter	Size(mm)				
	A	B	C	D	E
2	110	132	150	M8*1	31*26(front)
3	110	132	150	M8*1	31*26(front)
4	170	208	238	Φ 11	40*34(front)
6	170	208	238	Φ 11	40*34(front)
10	170	208	238	Φ 11	40*34(front)

6.2 Nominal diameter DN15-100



Diameter	Size(mm)				
	A	B	C	D	E
15	Φ 95	Φ 65	470	Φ 15	4- Φ 14
25	Φ 115	Φ 85	470	Φ 25	4- Φ 14
40	Φ 145	Φ 110	570	Φ 40	4- Φ 18
50	Φ 160	Φ 125	570	Φ 50	4- Φ 18
80	Φ 185	Φ 150	660	Φ 80	4- Φ 18
100	Φ 205	Φ 170	660	Φ 100	4- Φ 18

Notes : When the products need to match other products, we can do special design to change the configuration and size to meet customer's requirement.

VII. Model Selection and Description

Ordinary type: mainly apply to the measurement of Non-corrosive media.

Corrosion resistance type: mainly apply to the measurement of corrosive media.

Stainless steel type: mainly apply to the measurement of sanitary and weak corrosive medium; it can resist corrosive gas in the environment. Stainless steel Corrosion resistance type: mainly apply to the strong corrosive medium, to resist the corrosive gas in the

environment.

ABDT-LZB-	Diameter		Space	Measuring range and flux unit
		No remarks:ordinary type		
		F: Corrosion resistance type: PTFE Substrate (apply to DN2-DN10) or carbon steel flange lining PTFE		
		B: Stainless steel type: material: 304 stainless steel (apart from glass tube and sealing element) DN2-10 can choose 316 stainless steel		

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