

FLOW METER

Sn₀wate

Hengshui Snowate Environmental
Technology Co., Ltd.

EDITION FOR
SNOWATE DATA SHEET



HENGSHUI SNOWATE ENVIRONMENTAL TECHNOLOGY CO., LTD.

A TRUSTWORTHY SOURCING EXPERT ON WATER TREATMENT FACILITIES

As a senior sourcing expert on water treatment facilities and accessories, Hengshui Snowate Environmental Technology Co., Ltd. has extensive water treatment expertise, profound water treatment industry experience and a deep understanding of the water treatment industry purchasing demands. As a consequence, we are capable of providing one-stop purchase and technical support on water treatment facilities and accessories according to our customers' applications, thereby helping our customers to shorten the procurement cycle, reduce procurement costs and maximize economic benefits.

We integrate upstream supply chain products of the water treatment industry. In addition, we work with renowned suppliers and manufacturers. As a result, we can continuously supply high-quality water treatment components and systems for customers across the world to meet the needs of a Wide Range of Applications, Thereby Optimizing Water Resources and Promoting The Sustainable Development of The Global Environment.

The logo for Snowate features the word "Snowate" in a white, sans-serif font. The letter "o" is replaced by a stylized white water droplet icon. To the left of the text, there is a vertical white line that is partially cut off at the top.

Snowate

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LZT Series Acrylic Flow Meter

LZT Series Panel & Pipe Flow Meter

LZT series flow meter, made of Acrylic, is used to measure the single-phase non-pulsating flux of liquid or gas. It features a beautiful look, low weight and durability.

LZT-6T O₂ Oxygen Flow Meter for Concentrator

This flow meter is mainly used for measuring and controlling the flow of oxygen in oxygen concentrator.



Purchasing guide: Please fill in the model, specifications, and code in details.

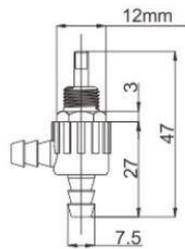
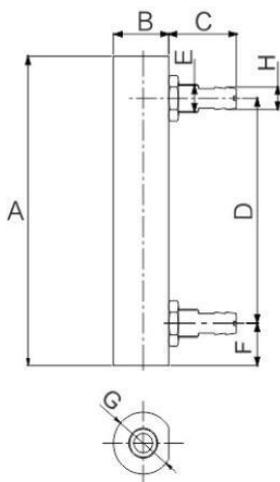
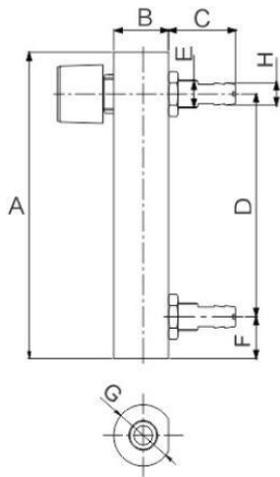
LZT-6 [Control Valve](#) **O₂** - [Height](#) - [Measurement Range](#)

Material & code of LZT-6T O₂ series flow meter

With valve	Height	Flow range	Control valve material	Fitting	O-ring material
T-with O-without	80: 80 mm	Refer to flow selection table	✓ H: Brass 304: SS	1.Brass ✓ 2.Chrome-plated Brass 3.SS	VMQ ✓ FKM NBR
	93: 93 mm				
	108: 108 mm				
	106: 106 mm				
	111: 111 mm				
116: 116 mm					

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

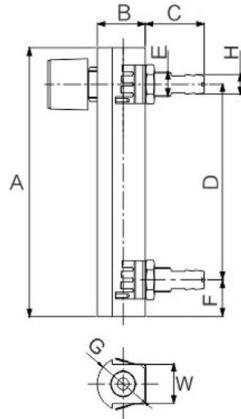
LZT-6T O₂ Series Flow Meter



LZT-6T O₂ Series Flow Meter Technical Parameters and Dimensions

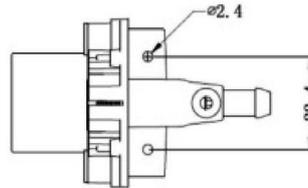
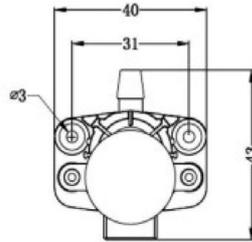
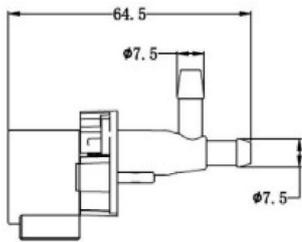
Model	Measurement Range (L/min)	Connection Method	Accuracy	Size (mm)							
				A	B	C	D	E	F	G	H
LZT-6T O ₂	0-5	Hose connection	±5%	93	20	21 or 19	70	M10 × 1 or 9/16-18	10	22	8
	0-10			96	20		70		13	22	8
	0-5			106	20		80		13	22	8
	0.1-1			108	20		70		25	22	8
	0-10			116	20		90		13	22	8
	0-5			0-10	116		20		90	13	22

LZT-6T O₂ Series Flow Meter



LZT-6T O₂ Series Flow Meter Technical Parameters and Dimensions

Model	Measurement Range (L/min)	Connection Method	Accuracy	Size (mm)								
				A	B	C	D	E	F	G	H	W
LZT-6T O ₂	0-5 0-10	Hose connection	±5%	93	20	21 or 19	70	M10 × 1 or 9/16-18	10	22	8	16
	0-5			96	20		70		13	22	8	16
	0-5 0.1-1 0-10			106	20		80		13	22	8	16
	0-5 0-10			108	20		70		25	22	8	16
	0-5 0-10			111	20		90		8	22	8	16
	0-5 0-10 0-20			116	20		90		13	22	8	16



Stepper Motor Rated Parameters

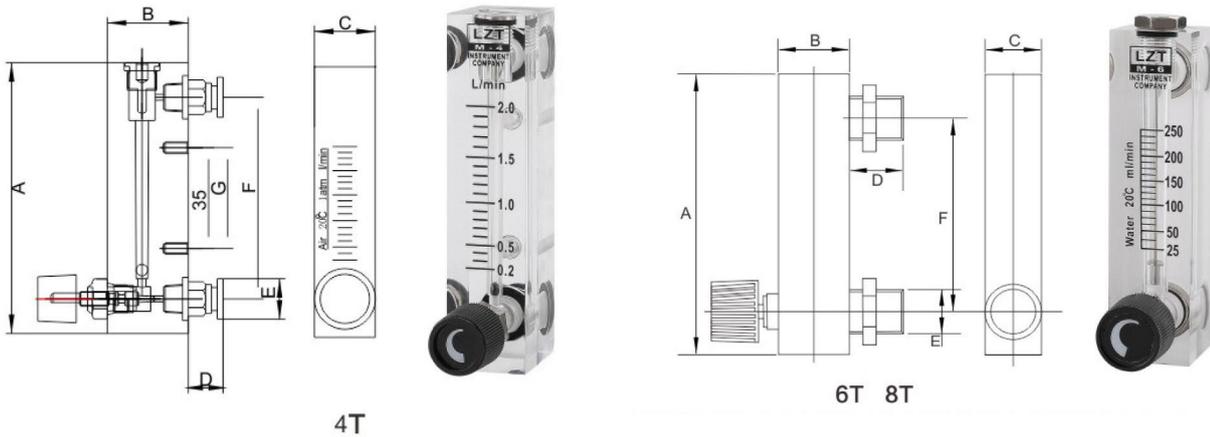
Item	Unit	Parameter	Item	Unit	Parameter
Rated Voltage	DC	12V	Self-Positioning Torque	mN.m	≥ 9
Step Angle	°	5.625	No-Load Pull-In Frequency	Hz	≥ 500
Reduction Ratio		1/64	No-Load Pull-Out Frequency	Hz	≥ 800
DC Resistance	Ω	120-200	Insulation Resistance	MΩ	≥ 50
Rotation Direction		CCw	Insulation Dielectric Strength	VAC/S Degree	≥ 600
Pull-In Torque	mN.m	≥ 98			

Oxygen Flow Control Switch Parameters

Working Medium	Oxygen
Working Temperature	-10 °C to 45 °C
Working Air Pressure	30-70 Pa
Maximum Air Pressure	0.15 MPa
Oxygen Flow Adjustment Range	0-8 L/revolution
Air Pipe Diameter	Φ8 mm

LZT Series Acrylic Flow Meter

LZT-4T, 6T, 8T Series Panel Flow Meter



LZT-4T, 6T, 8T Series Panel Flow Meter Technical Parameters and Dimensions

Model	Measurement Range		Connection Method	Accuracy	Size (mm)					
	MI/min (liquid)	L/min (gas)			A	B	C	D	E	F
LZT-4T	6-60 8-80 10-100 40-400	0.1-1 0.2-2 0.25-2.5 0.6-6 1-4 1-10 1-12	Quick plug	± 4%	94	28	21.6	14	14	70
LZT-6T	2-20 LPH 4-40 LPH 6-60 LPH 10-100 LPH 10-70 GPH	0.1-1 0.2-2 0.25-2.5 0.5-5 0.6-6 1-10 1-12 2-20 3-30 4-40 5-50 6-60 10-100 15-150	Female ZG 1/4"		102	30.6	25.6	18	M18 x 1.5	76
LZT-8T	2.5-25 LPH 5-45 LPH 6-60 LPH	0.1-1 m³/h 0.16-1.6 m³/h 0.2-2 m³/h			110	25	25	18	M18 x 1.5	80

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- [Model](#) [Control Valve](#) [Medium](#) [Measurement Range](#)

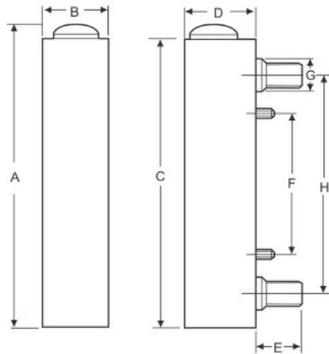
LZT-4T, 6T, 8T Series Panel Flow Meter Component Materials and Codes

With valve	Medium	Control Valve Material	Interface Material	O-Ring Material
T-with O-without	A : gas W : liquid	✓ H: Brass 304: SS	1.Brass ✓ 2.Chrome-plated Brass 3.SS	VMQ FKM ✓ NBR

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZT Series Acrylic Flow Meter

LZT- Series Panel Flow Meter



LZT- Series Panel Flow Meter Technical Parameters and Dimensions

Model	Measurement Range			Interface Thread	Accuracy	Size (mm)									
	GPM (liquid)	LPM (liquid)	m ³ /h (gas)			A	B	C	D	E	F	G	H		
LZT-15	-	6-60 LPH	0.1-1	0.16-1.6	Male ZG 1/2" Female ZG 1/4"	175	32	168	35	25	76	25	127		
		10-100 LPH	0.25-2.5	0.3-3											
		16-160 LPH	0.4-4	0.6-6											
		25-250 LPH	1-10	1.6-16											
		40-400 LPH	2-20	2.5-25											
		0.05-0.5	0.2-2	3-30										4-40	
LZT-20	-	1-10	2.5-25	3-30	Male ZG 3/4"	±4%	236	45	228	46	33	101.6	37	165	
		2-16	4-60	4-40											6-60
		2-14	12-52	10-100											
LZT-25	-	1-10	2.5-25	3-30	Male ZG 1"	±4%	236	45	228	46	33	101.6	37	165	
		2-16	4-60	4-40											6-60
		2-14	12-52	10-100											25-250
		2-20	10-70	16-160											30-300
		5-35	20-130												
		4-40	15-150												
LZT-40	-	4-40			Male ZG 1-1/2" Male NPT 1-1/2"	±4%	267	65	250	68	33	100	58	170	
		10-60	25-250												
		10-80	30-300												
		10-80	50-300												
		10-100	50-350												

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- [Model](#) [Medium](#) — [Measurement Range](#)

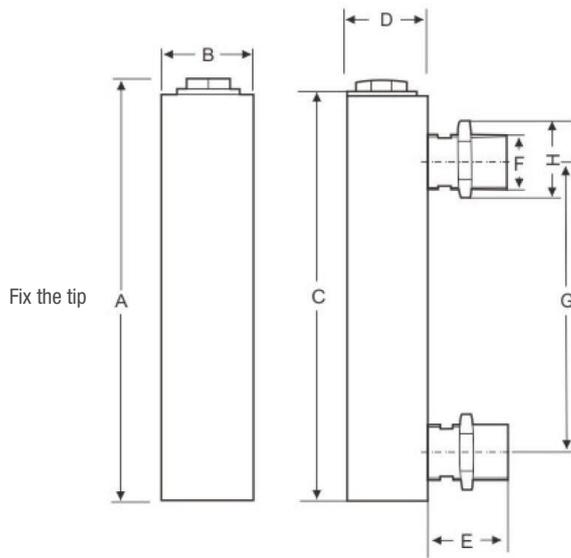
LZT- Series Panel Flow Meter Component Materials and Codes

Medium	Interface Material	O-Ring Material
A : gas W : liquid	1.ABS 2.PP ✓ 3. PVC 4. Brass 5. Chrome-plated brass 6. SS	✓ VMQ FKM

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZT Series Acrylic Flow Meter

LZT-L Series Panel Flow Meter



LZT-L Series Panel Flow Meter Technical Parameters and Dimensions

Model	Measurement Range			Interface Thread	Accuracy	Size (mm)							
	GPM (liquid)	LPM (liquid)	m ³ /h (gas)			A	B	C	D	E	F	G	H
LZT-15L	0.1-1	0.5-4	1-10 1.6-16 4-40	Male ZG 1/2" Male NPT 1/2"	±4%	216	32	206	37	33	1/2"	165	30
	0.2-2	1-7											
	0.3-3	1-11											
	0.5-5	2-18											
	1-7	2-28											
LZT-20L	1.5-9	5-35	2.5-25 6-60 16-160	Male ZG 3/4" Male NPT 3/4"	±4%	233	39	220	44	49	3/4"	165	32
	2-10	8-40											
	2-16	10-60											
LZT-25L	2-20	8-80	20-200 25-250	Male ZG 1" Male NPT 1"	±4%	253	44	240	50	48	1"	175	40
	1.5-15	6-60											
	3-13	5-50											
	4-24	10-100											
	5-35	20-130											
	5-45	20-170											

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- Model Medium Measurement Range

LZT-L Series Panel Flow Meter Component Materials and Codes

Medium	Interface Material	O-Ring Material
A : gas W : liquid	1.ABS 2.PP ✓ 3. PVC 4. Brass 5. Chrome-plated brass 6. SS	✓ VMQ FKM

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZT Series Acrylic Flow Meter

LZT-T/L-T Series Panel Flow Meter Technical Parameters

Model	Measurement Range			Interface Thread	Accuracy	
	GPM (liquid)	LPM (liquid)	m ³ /h (gas)			
LZT-15T	-	6-60 LPH	0.1-1	0.16-1.6	Male ZG 1/2" Female ZG 1/4"	±4%
		10-100 LPH	0.25-2.5	0.3-3		
		16-160 LPH	0.4-4	0.6-6		
		25-250 LPH	1-10	1.6-16		
		40-400 LPH	2-20	2.5-25		
	0.1-1	0.5-4	3-30	4-40		
	0.2-2	1-7	12-120 LPM			
	0.3-3	1-11	24-240 LPM			
	0.5-5	2-18	48-480 LPM			
LZT-20T	2-10	10-35	20-100		Male ZG 3/4"	
	4-14	15-50				
LZT-25T	2-10	10-35	20-100 40-160 50-250		Male ZG 1"	±4%
	4-14	15-50				
	6-20	20-70				
	10-35	30-130				
	10-40	30-150				
	15-45	50-150				
	5-45	50-170				
LZT-15L-T	0.1-1	0.5-4	1-10 1.6-16 4-40		Male ZG 1/2" Male NPT 1/2"	
	0.2-2	0.8-8				
	0.3-3	1-11				
	0.5-5	2-18				
LZT-20L-T	2-10	8-40	2.5-25 6-60 16-80 16-160		Male ZG 3/4" Male NPT 3/4"	
	2-16	8-60				
	2-20	8-80				
LZT-25L-T	3-13	10-50	20-200 25-250		Male ZG 1" Male NPT Z1"	
	6-24	20-100				
	10-35	30-130				
	10-45	30-170				



LZT-T/L-T dimensions are the same as LZT-IL series, refer to P7, P8 page

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- [Model](#) [Control Valve](#) [Medium](#) [Measurement Range](#)

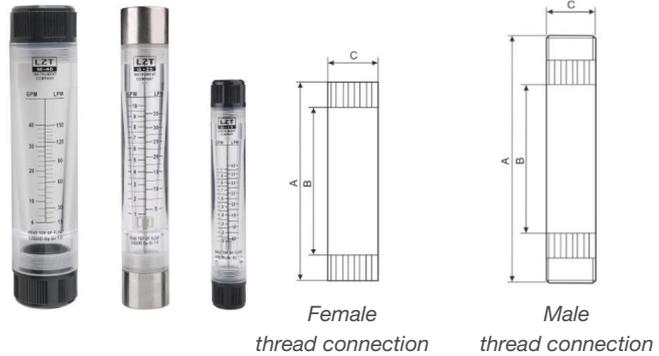
LZT-T/L-T Series Panel Flow Meter Component Materials and Codes

Medium	Valve Material	Interface Material	O-ring Material
A : gas W : liquid	1.Brass	20L-T	✓ VMQ FKM
		25L-T	
		25T	
	2.SS	15T	
		15L-T	
		✓ 1. PVC 2. PP 3. ABS 4. Brass 5. Chrome-plated Brass 6. SS	

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZT Series Acrylic Flow Meter

LZT-G Series Tube Type Flow Meter



LZT-G Series Tube Type Flow Meter Technical Parameters

Model	Measurement Range			Interface Thread	Accuracy	Size (mm)			
	GPM (liquid)	LPM (liquid)	m ³ /h (gas)			A	B	C	
LZT-15G	-	10-100 LPH	0.3-3 0.4-4 0.6-6 1-10 1.6-16 2.5-25 4-40	Female ZG 1/2"	±4%	210	160	φ32	
		16-160 LPH							
		25-250 LPH							
	0.05-0.5	0.2-2							
	0.1-1	0.5-4							
	0.2-2	1-7							
LZT-20G	1-10	5-35	6-60 10-100 15-140	Female ZG 3/4"	±4%	278	210	φ45	
		2-16							10-60
		2-20							10-70
LZT-25G	1-10	5-35	6-60 10-100 15-140 16-160 25-250 30-300	Female ZG 1"	±4%	278 or 306	210 or 235	φ45 or φ51	
		2-16							10-60
		2-20							10-70
		2-25							10-100
		3-30							12-120
		4-40							15-150
LZT-40G	4-40	15-150	35-350 150-400 150-500 120-600 150-700	Male ZG 1-1/2" Female ZG 1-1/2"	±4%	302	230	φ68	
		5-45							20-170
		6-60							20-220
		8-80							30-300
		10-100							40-400
LZT-50G	20-80	50-300	120-600 300-850 400-1200 500-1400	Female ZG 2"	±4%	340	270	φ75	
		20-100							75-400
		40-120		150-450					Male ZG 2"
		50-150		150-600					
		50-200		200-800					
LZT-75G	50-300	200-1000	-	Female ZG 3" Male ZG 3"	±4%	400	290	φ100	
		50-400							20-1500

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- Model Medium — Measurement Range

Material and Code of Components

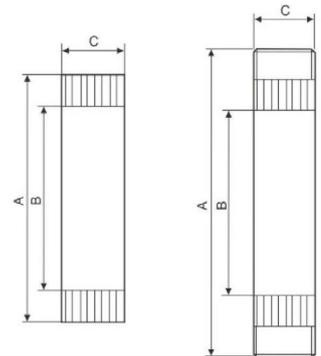
Medium	Interface Material	O-Ring Material
A : gas W : liquid	✓ 1. PVC 2. PP 3. ABS 4. Brass 5. Chrome-plated brass 6. SS	✓ VMQ FKM NBR

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZT Series Acrylic Flow Meter

LZT-GL Series Tube Type Flow Meter Technical Parameters

Model	Measurement Range			Interface Thread	Accuracy
	GPM (liquid)	LPM (liquid)	Nm³/h (gas)		
LZT-15GL	-	10-100 LPH	0.1-1 0.3-3 0.6-6 1-10 1.6-16 2.5-25 4-40	Female ZG 1/2"	±4%
		16-160 LPH			
		25-150 LPH			
	0.05-0.5	0.2-2			
	0.1-1	0.5-4			
	0.2-2	1-7			
	0.3-3	1-11			
LZT-20GL	1-10	5-35	6-60 10-100 15-140	Female ZG 3/4"	±4%
	2-16	10-60			
	2-20	10-70			
LZT-25GL	1-10	5-35	6-60 10-100 15-140 16-160 25-250 30-300	Female ZG 1"	±4%
	2-16	10-60			
	2-20	10-70			
	3-30	12-120			
	4-40	15-150			
LZT-40GL	1-10	5-35	6-60 10-100 15-140 16-160 25-250 30-300 35-350 40-400 50-500	Male ZG 1-1/2" Female ZG 1-1/2"	±4%
	2-16	10-60			
	2-20	10-70			
	3-30	12-120			
	4-40	15-150			
	5-45	20-170			
	6-60	20-220			



Female thread connection

Male thread connection

LZT-GL Series Tube Type Flow Meter Dimensions

Model	Size (mm)		
	A	B	C
LZT-15GL	210	180	32
LZT-20GL	278	236	45
LZT-25GL	265	235	51
LZT-40GL	306	235	51

Purchasing guide: Please fill in the model, specifications, and code in details.

LZT- Model Medium — Measurement Range

LZT-GL Series Tube Type Flow Meter Component Materials and Codes

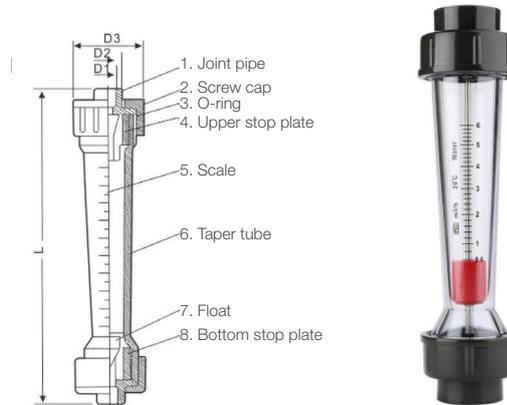
Medium	Interface Material	O-Ring Material
A : gas W : liquid	✓ 1. PVC 2. PP 3. ABS 4. Brass 5. Chrome-plated brass 6. SS	✓ VMQ FKM NBR

Note: Material marked with " ✓ ", the material of the flow meter is the General Configuration.

LZS Durable Plastic Tube Type Flow Meter

LZS- Socket/Thread Type Plastic Flow Meter

LZS-15 ~ LZS-65 Product Structure



LZS- Socket/Thread Type Plastic Flow Meter Technical Parameters and Dimensions

Model	Diameter (DN)mm	Measurement Range		Accuracy	Conditions		Size (mm)				Applicable Pipeline					
		Long Tube Type (L)	Short Tube Type (D)		Temperature °C	Pressure MPa	Long Tube Type		Short Tube Type		Socket	Thread				
LZS-15	15	5-50 L/h	5-50 L/h	±4%	0-60	≤ 0.6	L	D1	D2	D3	L	D1	D2	D3	20	ZG 1/2" NPT 1/2"
		6-60 L/h	10-100 L/h				280	20	26	45	200	20	26	45		
10-100 L/h	16-160 L/h	380	25				39	68	226	25	39	60	25	ZG 3/4" NPT 3/4"		
16-160 L/h	25-250 L/h															
LZS-20	20	16-160 L/h	16-160 L/h				380	25	39	68	226	25	39	60	25	ZG 3/4" NPT 3/4"
		25-250 L/h	40-400 L/h													
LZS-25	25	40-400 L/h	50-500 L/h				380	32	39	68	226	32	39	60	32	ZG 3/4" NPT 3/4"
		60-600 L/h	60-600 L/h													
LZS-32	32	80-800 L/h	100-1000 L/h				-	-	-	-	288	40	49.5	74	40	ZG 1" NPT 1"
		100-1000 L/h	0.4-4 m³/h													
LZS-40	40	0.4-4 m³/h	0.4-4 m³/h	430	50	73	98	341	50	73	98	50	ZG 1-1/2" G 2" NPT 2"			
		0.6-6 m³/h	0.6-6 m³/h													
LZS-50	50	1-10 m³/h	1-10 m³/h	430	63	73	98	341	63	73	98	63	ZG 1-1/2" G 2" NPT 2"			
		1.6-16 m³/h	1.6-16 m³/h													
LZS-65	65	4-16 m³/h	4-16 m³/h	-	-	-	-	430	75	88	122	75	ZG 2" G 2-1/2" NPT 2-1/2"			
		5-25 m³/h	5-25 m³/h													
		8-40 m³/h	8-40 m³/h													
		12-60 m³/h	12-60 m³/h													

Purchasing guide: Please fill in the model, specifications, and code in details.

LZS — **Model** **Long Tube or Short Tube Medium** — **Measurement Range**

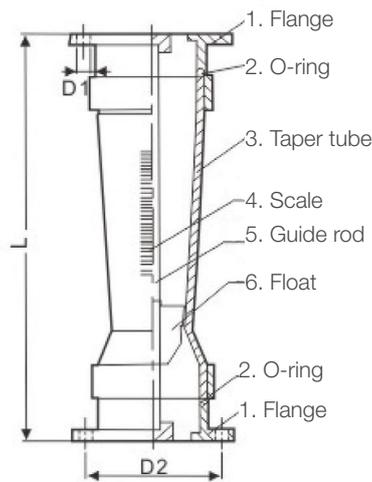
LZS- Plastic Tube Precision Durable Flow Meter Component Materials

Taper tube: AS, Connecting pipe & nut: PVC
Upper and lower limit stops: PE, Float: ABS

LZS Durable Plastic Tube Type Flow Meter

LZS- Flange Type Plastic Flow Meter

LZS-15-200 Product Structure



LZS- Flange Type Plastic Flow Meter Technical Parameters and Dimensions

Model	Diameter (DN)mm	Measurement Range (Flange Type)	Accuracy	Conditions		Size (mm)						
				Temperature °C	Pressure MPa	L (short)	L (long)	D1	D2			
LZS-15	15	5-50 l/h 10-100 l/h 16-160 l/h 25-250 l/h 40-400 l/h 50-500 l/h 60-600 l/h 100-1000 l/h	±4%	0-60	≤ 0.6	250	330	14	65			
LZS-20	20	100-1000 l/h 160-1600 l/h				290	445	14	75			
LZS-25	25	250-2500 l/h 300-3000 l/h				290	445	14	85			
LZS-32	32	0.4-4 m³/h 0.6-6 m³/h				355	-	18	100			
LZS-40	40	0.4-4 m³/h 0.6-6 m³/h				415	505	18	110			
LZS-50	50	1-10 m³/h 1.6-16 m³/h				428	518	18	125			
LZS-65	65	4-16 m³/h 5-25 m³/h				525	-	18	145			
LZS-80	80	8-40 m³/h 12-60 m³/h				530	-	18	160			
LZS-100	100	14-90 m³/h 20-120 m³/h 25-150 m³/h 20-180 m³/h 25-200 m³/h				550	-	18	180			
LZS-125	125					550	-	18	210			
LZS-150	150					550	-	18	240			
LZS-200	200					830	-	23	295			
LZS-250	250	20-200 m³/h 25-250 m³/h 30-300 m³/h 35-350 m³/h 40-400 m³/h				±4%	0-60	≤ 0.4	830	-	26	355
LZS-300	300								830	-	26	410

Purchasing guide: Please fill in the model, specifications, and code in details.

LZS – **Model** **Long Tube or Short Tube** **Medium** – **Measurement Range**

LZS- Plastic Tube Precision Durable Flow Meter Component Materials

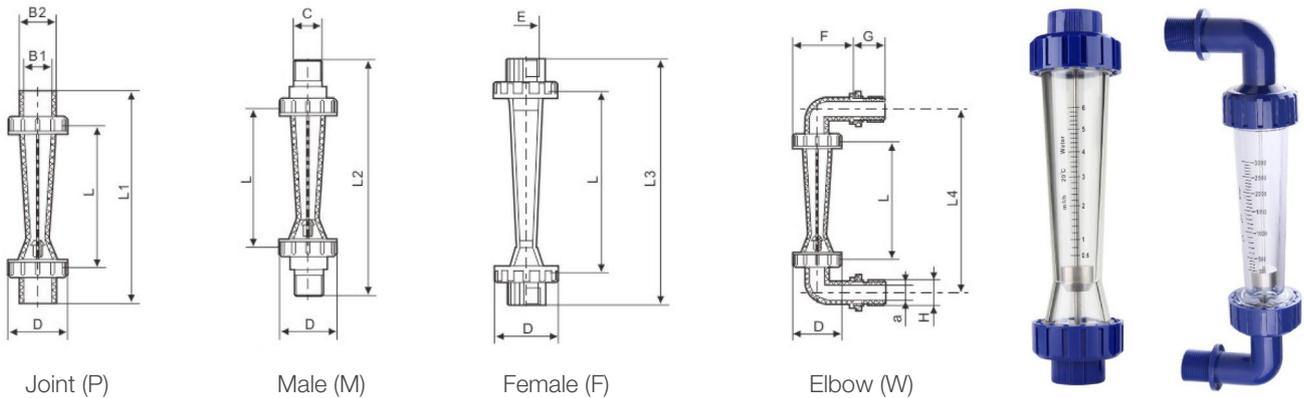
Taper tube: AS, Connecting pipe & nut: PVC
Upper and lower limit stops: PE, Float :ABS

LZS Durable Plastic Tube Type Flow Meter

LZS-E Plastic Tube Precision Durable Flow Meter

Main components: The taper tube material is polycarbonate (PC) or polyphenylsulfone (PSU), and the upper and lower connecting parts are made of polyvinyl chloride (PVC).

The float is made of stainless steel or ABS. Connection methods include pipe insertion, female and male thread connections, and panel installation.



LZS-E Plastic Tube Precision Durable Flow Meter Technical Parameters

Model	Diameter (DN)mm	Measurement Range		Accuracy	Working Temperature (°C)	Working Pressure
		GPM	LPM			
LZS-15E LZS-15EG	15	0.1-1 0.2-2 0.5-5	0.5-4 1-7 1.8-18	±4%	0-60 0-100	≤1 MPa
LZS-15EL LZS-15GL	15	0.1-1 0.2-2 0.5-5	0.5-4 1-7 1.8-18		0-60 0-100	
LZS-25E LZS-25G	25	0.8-8 1-10	3-30 4-40		0-60 0-100	
LZS-32E LZS-32EG	32	1.2-12 2-20 2.5-25	5-50 8-80 10-100		0-60 0-100	
LZS-50E LZS-50EG	50	2.5-25 5-45 7-70	10-100 20-180 25-250		0-60 0-100	
LZS-65E LZS-65EG	65	25-110 40-160 50-250	80-400 150-650 200-1000		0-60 0-100	

LZS-E Plastic Tube Precision Durable Flow Meter Technical Parameters Installation Dimensions

Model	L	D	Joint (P)			Male Thread (M)		Female Thread (F)		Elbow (W)				
			L1	B1	B2	L2	C	L3	E	L4	F	G	A	H
LZS-15E LZS-15EG	136	φ50	186	φ20	φ26	190	1/2" G 1/2" NPT	202	1/2" G 1/2" NPT	195	56	27	φ13	G 1/2" NPT 1/2"
LZS-15EL LZS-15GL	171.5	φ50	221.5	φ20	φ26	225	1/2" G 1/2" NPT	215	1/2" G 1/2" NPT	230	56	27	φ13	G 1/2" NPT 1/2"
LZS-25E LZS-25G	170	φ59	230	φ32	φ39	250	3/4" NPT	205	3/4" G 3/4" NPT	270	70.5	28	φ20	G 3/4" NPT 3/4"
LZS-32E LZS-32EG	225	φ72	290	φ40	φ49	310	1" NPT	290	1" G 1" NPT	345	86	35	φ26	G 1" NPT 1"
LZS-50E LZS-50EG	290	φ98	375	φ63	φ73	400	2" NPT	370	2" NPT	440	109	40	φ45	G 2" NPT 2"
LZS-65E LZS-65EG	325	φ120	420	φ75	φ89	445	2-1/2" NPT	435	2-1/2" NPT	-	-	-	-	G 2-1/2" NPT 2-1/2"

Y Series Plastic Tube Type Flow Meter

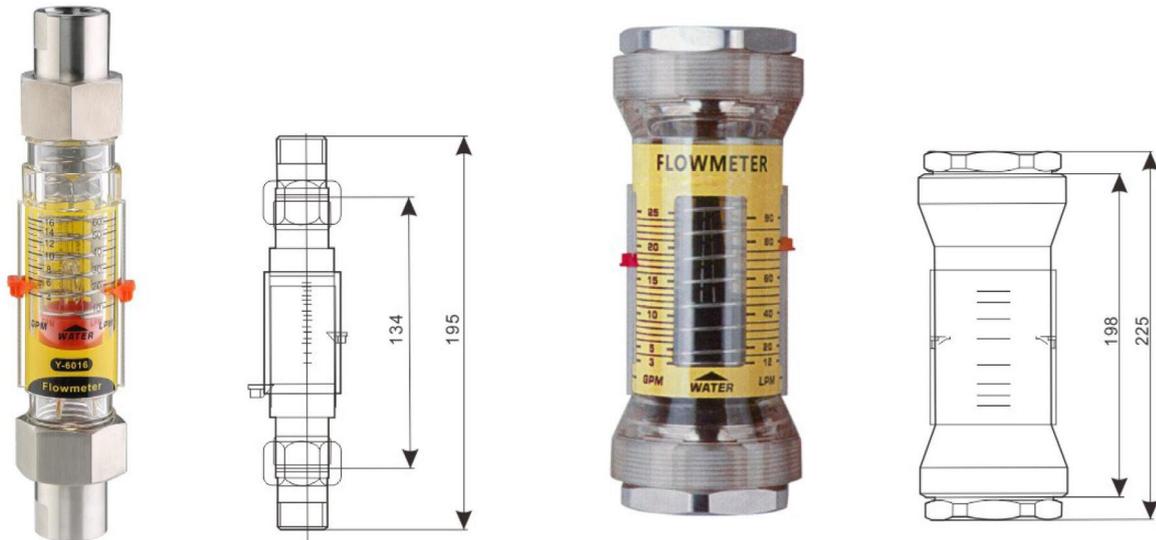
Y-Series Plastic Tube Flow Meter

The Y series flow meter is a variable area flow meter, with the main body material being polycarbonate (PC) or polyphenylsulfone (PSU), featuring high temperature and corrosion resistance. Since the float moves under the compression of a spring, this flow meter can be placed at any angle. Additionally, the red flow card is convenient for use and identification.

Working Pressure: $\leq 1\text{MPa}$

Working Temperature: PC: 0–80 °C, PSU: 0–120 °C

Accuracy: $\pm 6\%$



Y-Series Plastic Tube Flow Meter Technical Parameters

Model	Measurement Range (Water 20°C)		Thread	Material
	GPM	LPM		
Y-6005	0.5–5	2–20	ZG, Z, G 1/2" (Female, Male) ZG, Z, G 3/4" (Female, Male) ZG, Z, G 1" (Female, Male)	Brass SS PP PVC
Y-6007	1–7	4–26		
Y-6010	1–10	4–35		
Y-6016	1–16	5–60		
Y-6018	3–18	15–65		
Y-6028	4–28	20–100		
Y-6025	3–25	12–90	ZG, Z, G 1-1/2" (Female) ZG, Z, G 2" (Female) 2" Plastic Tube Socket Connection	
Y-6050	5–50	20–200		
Y-6080	8–80	30–280		
Y-6100	10–100	40–380		

Note: The default interface material is stainless steel.

Purchasing guide: Please fill in the model, specifications, and code in details.

Y – **Model** – **Measurement Range**

KF600 Orifice Plate Flow Meter

Model Selection and Description

The KF600 series integrated orifice flow meter is a shunt flow meter, with the float flow meter installed on the side of the measuring tube and combined with the shunt orifice plate. There are four different connection methods available for users to choose from: "Threaded" (AT), "Flange" (AF), "Wafer" (AC), and Separate Type (AD). When the fluid flows through the main orifice plate, a differential pressure is generated on both sides of the plate. This differential pressure value is equivalent to the flow rate. By installing the float flow meter in the bypass inlet and outlet, the flow through the float flow meter corresponds to the flow through the main pipeline. Therefore, the flow rate of the fluid in the main pipeline can be indicated by the scale of the glass float flow meter.

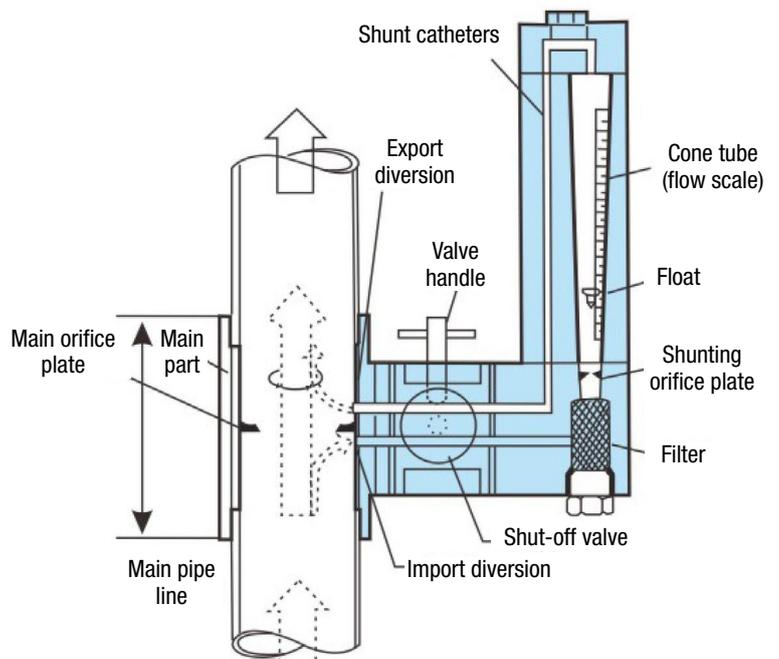
Medium Temperature: PVC: 0–60 °C, SS304: 0–120 °C

Accuracy: ±3%

Working Pressure: ≤1.0 MPa

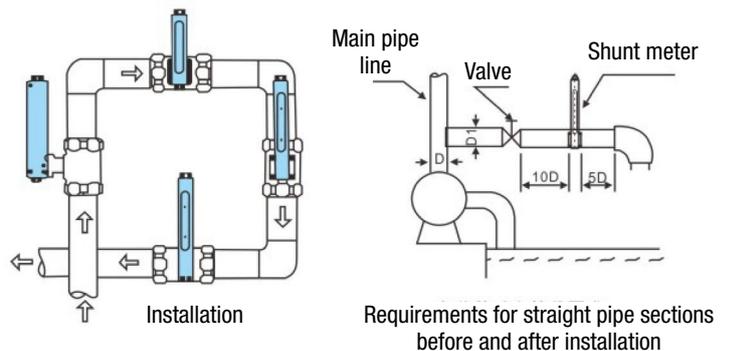
KF600 Technical Parameters

Diameter DN (mm)		Flow Range	
		Water (m³/h)	Air (Nm³/h)
10	3/8"	0.1–0.5	0.8–4
15	1/2"	0.2–1	2–10
20	3/4"	0.5–2.5	5–25
25	1"	1–5	8–40
32	1-1/4"	1.4–7	12–60
40	1-1/2"	2–10	18–90
50	2"	4–20	35–175
65	2-1/2"	7–35	60–300
80	3"	10–50	80–400
100	4"	18–90	160–800
125	5"	25–125	250–1250
150	6"	40–200	350–1700
200	8"	70–350	600–2800
250	10"	100–500	900–5000
300	12"	180–900	1600–7800
350	14"	200–1000	2000–9500
400	16"	300–1500	3000–14500
450	18"	400–2000	4000–19000
500	20"	500–2500	5000–24000

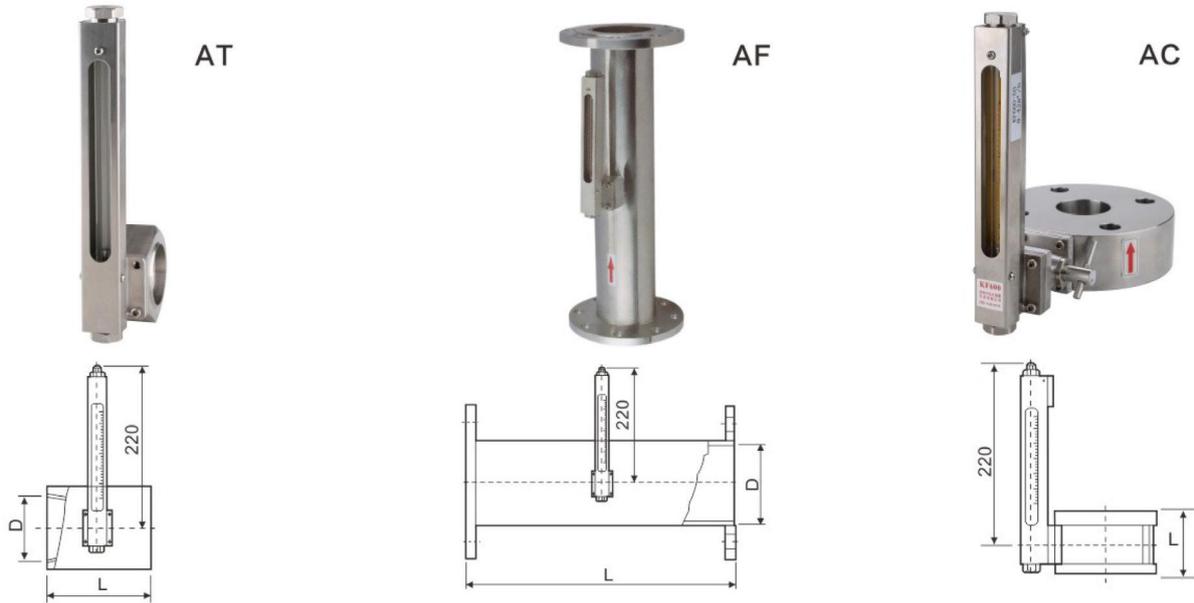


Installation Direction:

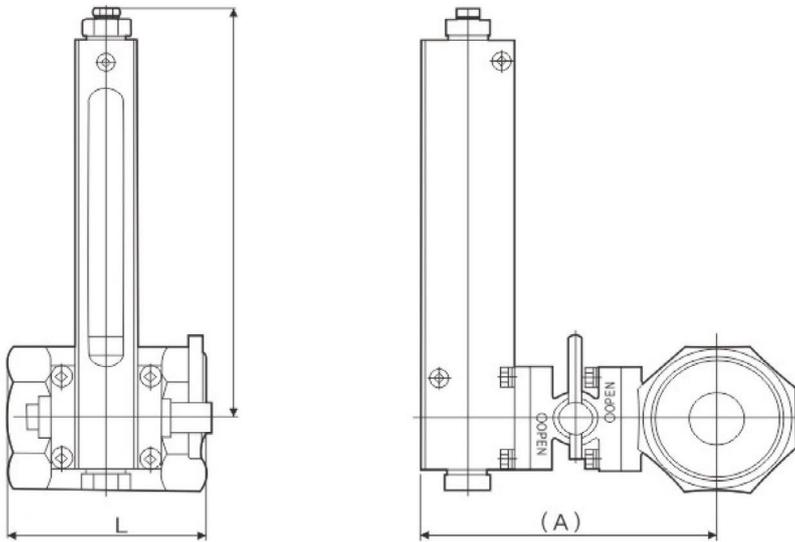
The KF600 orifice flow meter can change its installation direction as shown in the right diagram, with flow directions being: bottom → top, left → right, right → left, and top → bottom. It is very easy to change the flow direction of the flow meter on-site.



KF600 Orifice Plate Flow Meter



AT Thread Connection Type



AT Dimensions

Unit (mm)

Diameter	Measuring Tube Material SS304	
	L	*A
10	70	—
15	70	—
20	70	—
25	70	—
32	70	120
40	84	120
50	80	130
65	80	140
80	90	145
100	100	160

*A: In the absence of a shut-off valve, the length of A should be reduced by 52 mm.

Requirements for Straight Pipe Sections Before and After Installation:

To achieve accurate flow measurement, the following straight pipe sections are recommended:

D is the diameter of the main pipeline

	90 °C Elbow	Fully open valve
Upstream straight pipe	10D	12D
Downstream straight pipe	5D	5D

Flow reading:

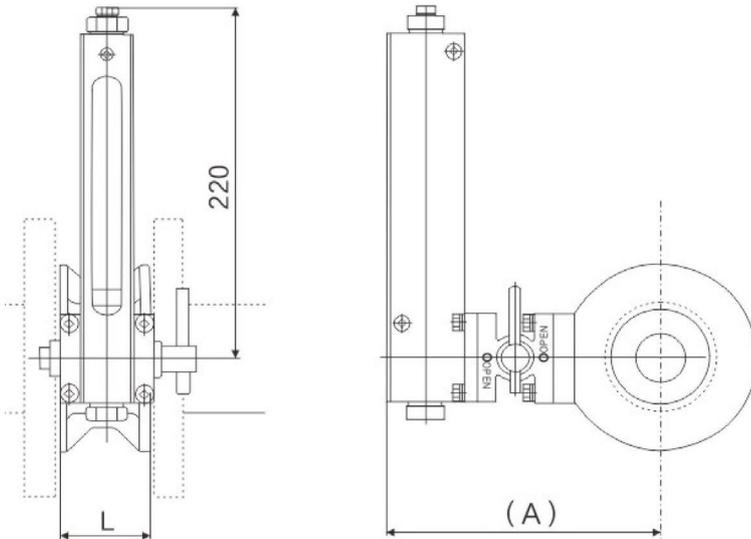
The flow is read by the position and scale of the float, see the chart below:

Detection of gas		The indicator (for liquids)	
Core →		Top →	
Alarm mode (metal material)		Alarm mode (PVC)	
→		Top →	

KF600 Orifice Plate Flow Meter

AC: Wafer connection type

(1) Material (SS304, PVC)



AC Dimensions

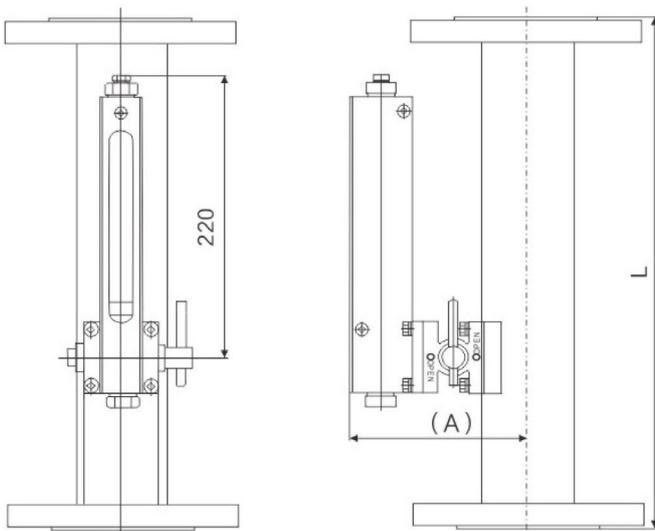
Unit (mm)

Diameter	L	*A
10	50	137
15	50	140
20	50	145
25	50	150
32	50	165
40	50	170
50	50	178
65	50	190
80	50	195
100	50	200
125	50	220
150	50	240
200	50	270
250	50	295
300	50	320
350	65	350
400	65	380
450	65	405
500	65	432
600	65	492

*A: For the wafer connection type without a shut-off valve, the length of A should be reduced by 52mm.

AF: Flange connection type

(1) Material (SS304, PVC)



Special designs of L 200 mm (diameter 10 mm–80 mm) and L 300 mm (diameter 100 mm–600 mm) can be supplied upon request. Please contact the manufacturer for details.

AF Dimensions

Unit (mm)

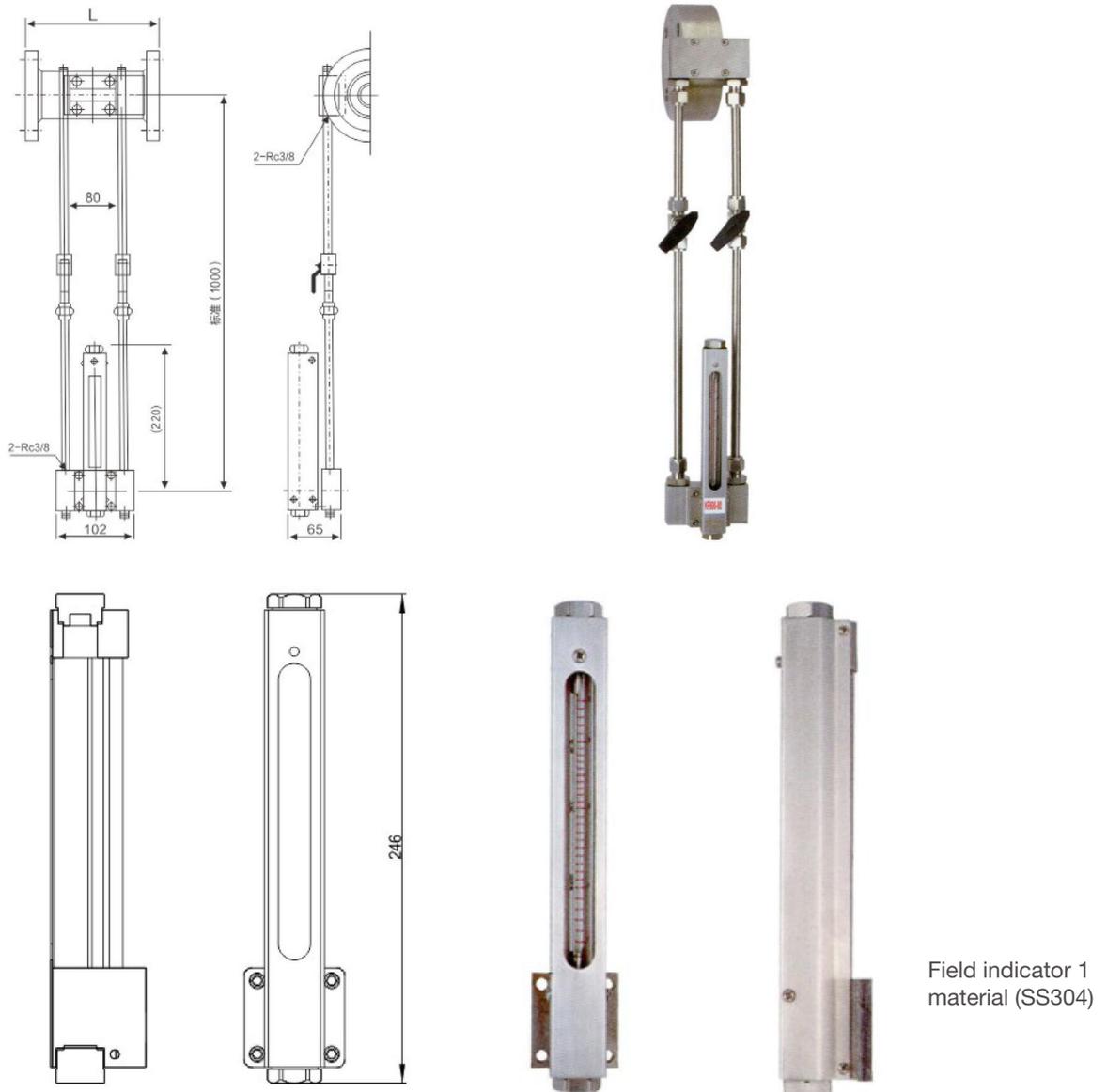
Diameter	Measuring Tube Material SS304	
	L	*A
10	520	–
15	520	–
20	520	–
25	520	–
32	520	–
40	520	138
50	520	143
65	540	150
80	540	157
100	540	168
125	540	180
150	540	193
200	540	218
250	540	242
300	540	268
350	540	460
400	540	510
450	540	560
500	540	610
600	540	710

*Without a shut-off valve, the length of A should be reduced by 52mm. DN10–DN40 requires special customization.

KF600 Orifice Plate Flow Meter

AD: Separate Type

When the location of the process piping is difficult to read, the two ball valves can be used as a maintenance indicator by means of a shunt catheter that allows the indicator to be moved up and down the process piping to facilitate reading the flow rate. In addition, according to the scene conditions, describe the size of the shunt catheter, direction, shape requirements in details and negotiate with manufacturers.



Purchasing guide: Please fill in the model, specifications, and code in details.

KF600 — [Model](#) [Connection Method](#) [Presence of Shut-off Valve](#) [Flow Range](#)

LZB Glass Tube Flow Meter

Overview

The glass flow meter is mainly used in various sectors such as chemical industry, petroleum, light industry, pharmaceuticals, fertilizers, chemical fibers, food, dyes, environmental protection, and scientific research to measure the flow rate of single-phase non-pulsating (liquid or gas) fluids.

Corrosion-resistant flow meters are primarily used for detecting the flow of corrosive liquid and gas media, such as strong acids (excluding hydrofluoric acid), strong alkalis, oxidizers, strong oxidizing acids, organic solvents, and other corrosive gases or liquids.

The LZB type measuring taper uses a smooth tapered glass tube. LZJ type with ribbed conical glass tube.

Product standards: JB/T9255-2015 (industry standard)

Flange standards: GB/T9124.1-2019

(DN15–50 mm is PN1.0MPa)

(DN80–100 mm is PN0.6MPa)

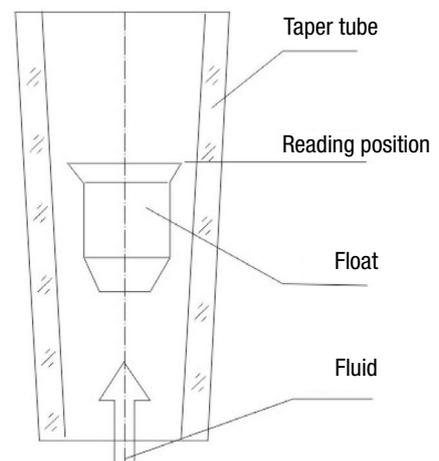


Working Principle

The main measuring element of the flow meter is a vertically mounted small bottom large top conical glass tubes and float can move up and down. When the fluid flows through the bottom-up tapered glass tube, the pressure difference generates between the upper and lower float, the float rises under the pressure difference. When the rising force, buoyancy and viscous forces are equal to the float gravity, the float is in a balance position. Therefore, and float lifting height, there is a proportional relation between the fluid flow through the flow meter and the flow area of flow meter, so the float position height can be used as a measure of the flow.

Features

- Small pressure loss
- Reliable performance, easy reading
- Simple structure, easy to install and use
- Cheap price



LZB Glass Tube Flow Meter

Technical Parameters

1. Normal type:

Mainly applicable to the measurement of non-corrosive media.
Model: No marks

2. Corrosion-resistant type:

Mainly applicable to the measurement of corrosive media.
Marked as F: PTFE base (DN2–10) or carbon steel flange with PTFE lining (DN15–100)

3. SS304 type:

Mainly applicable to the measurement of sanitary and weak corrosive media, and can be resistant to corrosive gases in the environment.
Marked as B: SS304 (Except glass tube and seals).

4. SS316 type:

Mainly applicable to the measurement of sanitary and weak corrosive media, and can be resistant to corrosive gases in the environment.
Marked as B0: SS316 (Except glass tube and seals).

5. SS corrosion type:

Mainly applicable to the measurement of strong corrosive media, can be resistant to corrosive gases in the environment.
Marked as B/F: SS 304 flange lined with PTFE (DN15–100)

Media Contact Part Material Comparison

1. Standard type:

LZB-2-10			
Base and valve needle	Stop	Float	Sealed packing
Chrome plated brass and SS	PTFE	Agate ball or SS304	Acid & alkali resistant rubber r (IV-1)
LZB-15-40			
Flange	Stop	Float & Guide Rod	Sealed Packing
Cast iron lining Acid & alkali resistant rubber (IV-1)	PTFE	SS304	Acid & alkali resistant rubber (IV-1)
LZB-50-100			
Flange	Stop	Float & Guide Rod	Sealed Packing
Cast iron lining Amino baking paint	Cast iron lining Amino baking paint	SS304	Acid & alkali resistant rubber (IV-1)

Note: All diameter flow meter cone glass material is high borosilicate glass. (Same below)

2. Corrosion-resistant type: LZB- □□ F or LZB- □□ B/F

DN2–10 uses the PTFE base, DN15–100 adopts cast iron flanges lined with PTFE and marked as LZB- □□ F.

For DN15–100, if you want to use stainless steel flange lined with PTFE, is a full stainless steel corrosion proof type, marked as LZB- □□ B/F , needs to be customized.

LZJ is ribbed glass tube, with a guiding float, mainly used to improve the stability and needs to be customized.

3. SS type: LZB- □□ B 304 or LZB- □□ B0 316

The flange or the base and the valve needle, float and guide rod, plate, shell and bolt are SS 304, marked as LZB- □□ B.

DN ≤ 10 mm, 316 stainless steel can be selected as all stainless steel type flow passage part, marked as LZB-2-10B0, and can be customized.

DN ≥ 15 mm, 316 stainless steel can be selected as all stainless steel type flow passage part, 304 is used for support plate and gland cover, marked as LZB-15-100B0.

LZB Glass Tube Flow Meter

Model Selection and Description



LZB-2-3 Standard Type, SS Type

LZB-4-10 Standard Type, SS Type

1	Standard Type	LZB-2	LZB-3	LZB-4	LZB-6	LZB-10	
2	Stainless Steel Type	LZB-2B	LZB-3B	LZB-4B	LZB-6B	LZB-10B	
3	Diameter	DN2	DN3	DN4	DN6	DN10	
4	Connection	M8 × 1 (male thread)	M8 × 1 (male thread)	φ10 pagoda-shape connectors	φ10 pagoda-shape connectors	φ11 pagoda-shape connectors	
5	Pressure	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	
6	Medium Temperature	0-100 °C	0-100 °C	0-100 °C	0-100 °C	0-100 °C	
7	Accuracy	±4%	±4%	±4%	±2.5%	±2.5%	
8	Range Ratio	1:10	1:10	1:10	1:10	1:10	
9	Measurement Range	Liquid	0.4-4 mL/min	2.5-25 mL/min	1-10 L/h	2.5-25 L/h	6-60 L/h
			0.6-6 mL/min	4-40 mL/min	1.6-16 L/h	4-40 L/h	10-100 L/h
			1-10 mL/min	6-60 mL/min	2.5-25 L/h	6-60 L/h	16-160 L/h
			1.6-16 mL/min	10-100 mL/min	-	-	-
		Air	6-60 mL/min	40-400 mL/min	16-160 L/h	0.04-0.4 m³/h	0.1-1 m³/h
			10-100 mL/min	60-600 mL/min	25-250 L/h	0.06-0.6 m³/h	0.16-1.6 m³/h
			16-160 mL/min	0.1-1 L/min	0.04-0.4 m³/h	0.1-1 m³/h	0.25-2.5 m³/h
			25-250 mL/min	0.16-1.6 L/min	-	-	0.5-5 m³/h

LZB Glass Tube Flow Meter

Model Selection and Description



LZB-2-3 Corrosion-resistant Type

LZB-4-10 Corrosion-resistant Type

1	Corrosion-resistant type	LZB-2F	LZB-3F	LZB-4F	LZB-6F	LZB-10F	
2	Diameter	DN2	DN3	DN4	DN6	DN10	
3	Connection	φ9 pagoda-shape connectors	φ9 pagoda-shape connectors	φ11 pagoda-shape connectors	φ11 pagoda-shape connectors	φ11 pagoda-shape connectors	
4	Pressure	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	PN 1.0 MPa	
5	Medium Temperature	0-100 °C	0-100 °C	0-100 °C	0-100 °C	0-100 °C	
6	Accuracy	±4%	±4%	±4%	±4%	±4%	
7	Range Ratio	1:10	1:10	1:10	1:10	1:10	
8	Measurement Range	Liquid	-	-	-	-	2.5-25 L/h
			0.4-4 mL/min	2.5-25 mL/min	-	1-10 L/h	4-40 L/h
			0.6-6 mL/min	4-40 mL/min	-	1.6-16 L/h	6-60 L/h
			1-10 mL/min	6-60 mL/min	-	-	10-100 L/h
		Air	1.6-16 mL/min	10-100 mL/min	-	-	16-160 L/h
			6-60 mL/min	40-400 mL/min	16-160 L/h	-	0.1-1 m³/h
			10-100 mL/min	60-600 mL/min	25-250 L/h	0.04-0.4 m³/h	0.16-1.6 m³/h
			16-160 mL/min	0.1-1 L/min	0.04-0.4 m³/h	0.06-0.6 m³/h	0.25-2.5 m³/h
25-250 mL/min	0.16-1.6 L/min	-	0.1-1 m³/h	-			

LZB Glass Tube Flow Meter

Model Selection and Description



LZB-15-50 Standard Type,
Corrosion-Resistant Type, SS Type



LZB-80-100 Standard Type,
Corrosion-Resistant Type, SS Type

1	Standard type	LZB-15	LZB-25	LZB-40	LZB-50	LZB-80	LZB-100	
2	Corrosion-resistant type	LZB-15F	LZB-25F	LZB-40F	LZB-50F	LZB-80F	LZB-100F	
3	Stainless Steel type	LZB-15B	LZB-25B	LZB-40B	LZB-50B	LZB-80B	LZB-100B	
4	Diameter	DN15	DN25	DN40	DN50	DN80	DN100	
5	Connection	Flange	Flange	Flange	Flange	Flange	Flange	
6	Pressure	PN 0.6 MPa	PN 0.6 MPa	PN 0.6 MPa	PN 0.6 MPa	PN 0.4 MPa	PN 0.4 MPa	
7	Medium Temperature	0-100 °C	0-100 °C	0-100 °C	0-100 °C	0-100 °C	0-100 °C	
8	Accuracy	±2.5%	±1.5%	±1.5%	±1.5%	±1.5%	±1.5%	
9	Accuracy	±4% (corrosion-resistant type)	±2.5% (corrosion-resistant type)	±2.5% (corrosion-resistant type)	±2.5% (corrosion-resistant type)	±2.5% (corrosion-resistant type)	±2.5% (corrosion-resistant type)	
10	Range Ratio	1:10	1:10	1:10	1:10	1:10,1:5	1:5	
11	Measurement Range	Liquid	16-160 L/h	40-400 L/h	-	0.4-4 m³/h	1-10m³/h	5-25m³/h
			25-250 L/h	60-600 L/h	0.16-1.6 m³/h	0.6-6 m³/h	1.6-16m³/h	8-40m³/h
			40-400 L/h	100-1000 L/h	0.25-2.5 m³/h	1-10 m³/h (special type) 2-8 m³/h (corrosion-resistant type)	7-30 m³/h (special type) 4-20 m³/h (corrosion-resistant type)	12-60 m³/h (special type) 20-60 m³/h (corrosion-resistant type)
		Air	0.25-2.5m³/h	1-10 m³/h	4-40 m³/h	10-100 m³/h	50-250 m³/h	120-600 m³/h
			0.4-4.0 m³/h	1.6-16 m³/h	6-60 m³/h	16-160 m³/h	80-400 m³/h	200-1000 m³/h
			0.6-6.0 m³/h	2.5-25 m³/h	-	-	-	-

LZB-S Type Water Meter Calibration Device Dedicated Flow Meter

1	Model	LZB-15S	LZB-25S	LZB-50S	LZB-80S	
2	Diameter	DN15	DN25	DN50	DN80	
3	Pressure	PN 0.6 MPa	PN 0.6 MPa	PN 0.6 MPa	PN 0.4 MPa	
4	Accuracy	±1.5%	±1.5%	±1.5%	±1.5%	
5	Measurement Range	Medium (water)	4-128 L/h	120-1400 L/h	1.4-9 m³/h	9-40 m³/h

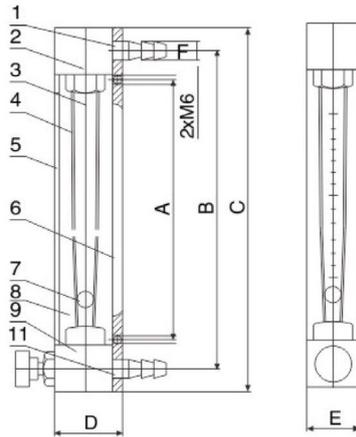
Note: This series is dedicated to water meter calibration devices, but can also be used in other situations. It can be made into all stainless steel type: LZB- □□ S/B (or B0), but cannot be made into corrosion-resistant type.

LZB Glass Tube Flow Meter

Structure and Dimensions

LZB-2-10 Standard Type and Stainless Steel Type Dimensions

1. Outlet port
2. Top base
3. Top compression cap
4. Tapered glass tube
5. Acrylic cover shell
6. Supporting plate
7. Float
8. Bottom compression cap
9. Bottom base
10. Enter port
11. Needle valve

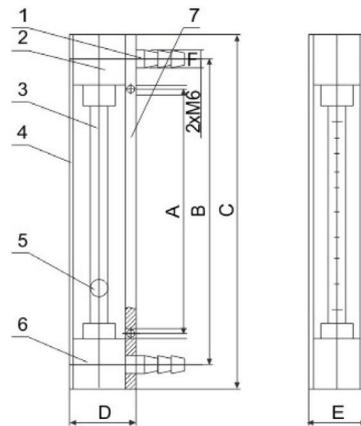


(mm)

Diameter DN	A	B	C	D	E	F
2	110	132	150	31	26	M8 × 1
3	110	132	150	31	26	M8 × 1
4	170	208	238	40	34	φ11
6	170	208	238	40	34	φ11
10	170	208	238	40	34	φ11

LZB-2-10 Corrosion-Resistant Type Dimensions

1. Pagoda-shape connector
2. Top base
3. Tapered tube
4. Acrylic cover shell
5. Float
6. Bottom base
7. Supporting plate

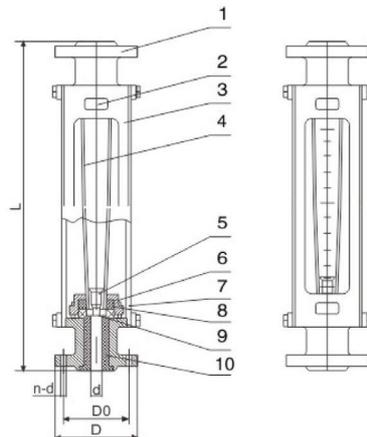


(mm)

Diameter DN	A	B	C	D	E	F
2	101	123	141	30	26	φ9 pagoda-shape connector
3	101	123	141	30	26	φ9 pagoda-shape connector
4	149	187	217	40	34	φ11 pagoda-shape connector
6	149	187	217	40	34	φ11 pagoda-shape connector
10	149	187	217	40	34	φ11 pagoda-shape connector

LZB-15-100 Standard Type, Corrosion-Resistant Type & Stainless Steel Type Dimensions

1. Base (Flange)
2. Label
3. Cover shell
4. Tapered glass tube
5. Float
6. Gland
7. Supporting plate
8. Seal ring
9. Stop plate
10. Liner



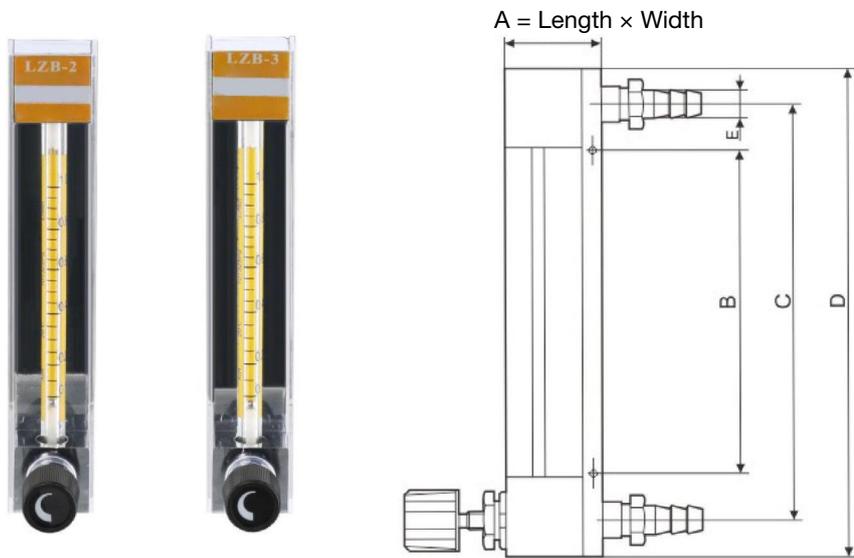
(mm)

Diameter DN	L	D0	D	d	n-d
15	470	φ65	φ95	φ15	4-φ14
25	470	φ85	φ115	φ25	4-φ14
40	570	φ110	φ145	φ40	4-φ18
50	570	φ125	φ160	φ50	4-φ18
80	660	φ150	φ185	φ80	4-φ18
100	660	φ170	φ205	φ100	4-φ18

LZB Glass Tube Flow Meter

LZB-WB Series Glass Flow Meter

The LZB-WB flow meter comes in 5 specifications, including $\phi 2$, $\phi 3$, $\phi 4$, $\phi 6$, and $\phi 10$. This flow meter is suitable for measuring small flow ranges. It features a compact design and lightweight, making it widely used in various analytical instruments, environmental protection equipment, medical devices, and other experimental apparatus. WB type: flow meter with a control valve; W type: flow meter without a control valve.



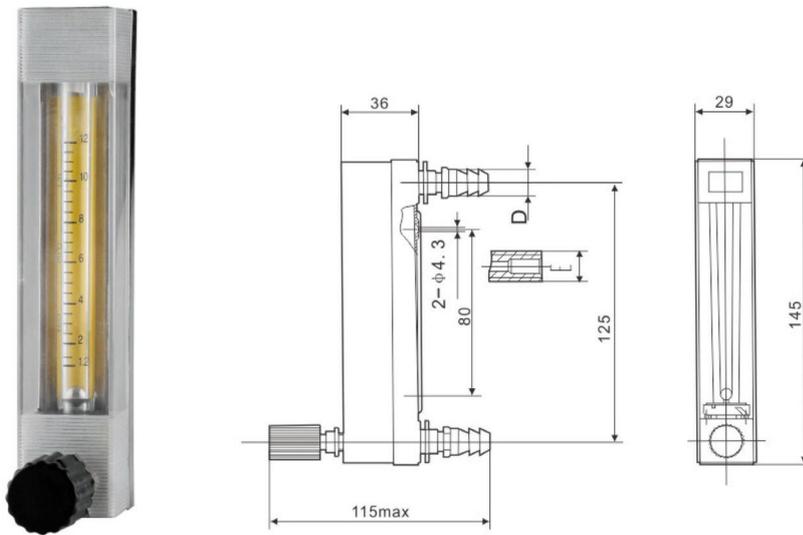
LZB-WB Series Glass Flow Meter Parameters and Installation Dimensions

Model	Measurement Range		Accuracy	Working Pressure	Working Temperature	Size (mm)				
	Water	Air				A	B	C	D	E
LZB-2WB	0.4–4 mL/min	6–60 mL/min	±4%	≤ 1 MPa	0–60 °C	23 × 25	90	116	136	φ6
	0.6–6 mL/min	10–100 mL/min								
	1–10 mL/min	16–160 mL/min								
	1.6–16 mL/min	25–250 mL/min								
LZB-3WB	2.5–25 mL/min	40–400 mL/min								
	4–40 mL/min	60–600 mL/min								
	6–60 mL/min	0.1–1 L/min								
LZB-4WB	10–100 mL/min	0.16–1.6 L/min								
	16–160 mL/min	0.3–3 L/min								
LZB-6WB	25–250 mL/min	0.6–6 L/min				±2.5%	≤ 1 MPa	0–60 °C	28 × 25	90
	0.04–0.4 L/min	0.7–7 L/min								
LZB-10WB	0.06–0.6 L/min	1–10 L/min								
	0.1–1 L/min	1.5–15 L/min								
LZB-10WB	0.1–1 L/min	3–30 L/min								
	0.16–1.6 L/min	5–45 L/min								

LZB Glass Tube Flow Meter

LZB-DK800 Glass Flow Meter

This flow meter is suitable for measuring and regulating small flow rates. It features a simple appearance and easy installation. It can easily replace the tapered tube and float without removing the entire unit from the pipeline. The connection method can be either a hose or a metal pipe.



LZB-DK800 Glass Flow Meter Technical Parameters

Model	Diameter (DN) mm	Measurement Range (L/h)		Accuracy (±%)	Conditions		Size (mm)		Outer Diameter of Metal Tube (mm)
		Water 20 °C	Air 101325 Pa 20 °C		Working Temperature	Working Pressure	D	E	
DK800-4 DK800-4F	4	0.25–2.5	0.5–5 0.8–8 1.6–16 4–40 6–60	2.5	-20 °C to +120 °C	≤ 1.0 MPa	φ9	M8 × 1	φ5
DK800-6 DK800-6F	6	0.5–5 1.2–12 2.5–25 4–40 6–60 10–100 16–160	10–100 25–250 50–500 80–800 100–1000 180–1800 240–2400 300–3000 350–3500 430–4300						

Note: Models with an F suffix are corrosion-resistant types.

LZB Glass Tube Flow Meter

LZB-VA/SA/FA/WA Series Glass Flow Meter

This series of flow meters is a type of glass rotor flow meter and features high measurement accuracy, good interchangeability, and various connection methods compared to similar products. It can provide a millimeter scale, percentage scale, flow scale, and detachable external scale for the convenience of different users. The connection methods include LZB-VA10/VA20 pipe thread connection, LZB-SA10/SA20 hose connection, and LZB-FA10/FA20 flange connection (loose flange structure).



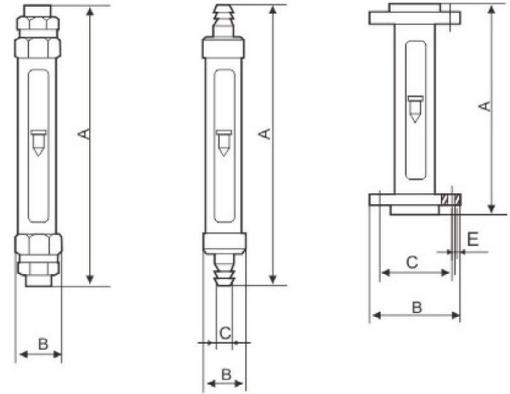
LZB-VA/SA/FA/WA Series Glass Flow Meter Technical Parameters

Model	Diameter (DN) mm	Measurement Range					Accuracy (±%)	Working Temperature	Working Pressure
		Water 20 °C (L/h)			Air 101325 Pa 20 °C (m³/h)				
VA/SA/FA10-15 VA/SA/FA20-15 VA/FA/WA30S-15	15	4-40 12-120 25-250 40-400 65-650	6.3-63 16-160 30-300 46-460 75-750	10-100 20-200 36-360 63-630	0.12-1.2 0.3-3 0.5-5 0.8-8 1.2-12	0.2-2 0.4-4 0.6-6 0.9-9 2-20	1.5	-20 °C to +60 °C or -20 °C to +120 °C	≤ 1.0 MPa
VA/SA/FA10-25 VA/SA/FA20-25 VA/FA/WA30S-25	25	40-400 63-630 100-1000 160-1600 250-2500	50-500 80-800 120-1200 200-2000 300-3000	1.6-16 2.5-25 4-40 6-60	2-20 3-30 5-50				
VA/SA/FA10-40 VA/SA/FA20-40 VA/FA/WA30S-40	40	160-1600 250-2500 400-4000	200-2000 300-3000 500-5000	5-50 8-80 12-120	6-60 9-90	≤ 0.9 MPa			
VA/SA/FA10-50 VA/SA/FA20-50 VA/FA/WA30S-50	50	250-2500 400-4000 630-6300 1000-10000 4000-16000	300-3000 500-5000 800-8000 1500-15000	10-100 16-160 30-300	12-120 20-200	≤ 0.7 MPa			

LZB Glass Tube Flow Meter

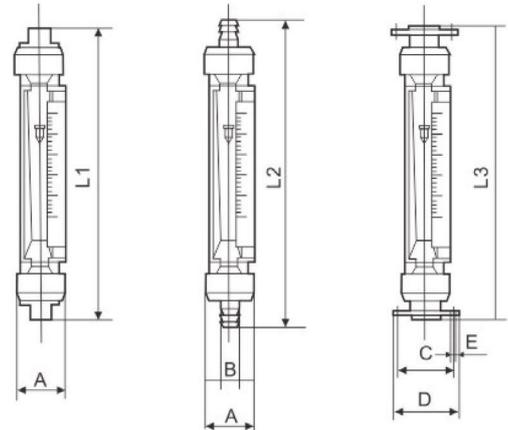
LZB-VA/SA/FA10 Series Glass Flow Meter Installation Dimensions and Structural Diagram

Diameter (DN) mm	Display Size a × b	VA10 Pipe Thread Connection			SA10 Hose Connection			FA10 Flange Connection			
		A	B	Pipe thread	A	B	C	A	B	C	E
15	26 × 230	410	53	G 1/2"	400	Φ44	Φ13.5	320	Φ95	Φ65	4-Φ14
25		414	75	G 1"		Φ65	Φ27		Φ115	Φ85	
40	40 × 230	428	92	G 1-1/2"	450	Φ80	Φ44		Φ145	Φ110	4-Φ14
50	50 × 230	431	116	G 2"		Φ103	Φ53		Φ160	Φ125	



LZB-VA/SA/FA20 Series Glass Flow Meter Installation Dimensions and Structural Diagram

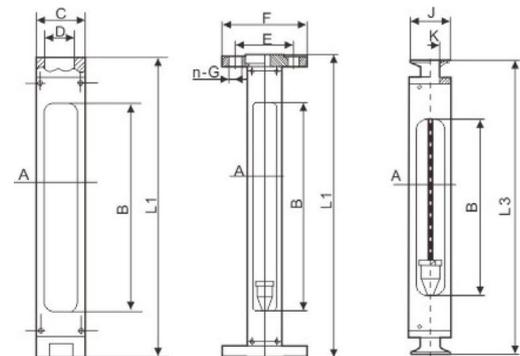
Diameter (DN) mm	VA20 Pipe Thread Connection			SA20 Hose Connection			FA20 Flange Connection			
	L1	A	Pipe Thread	L2	A	B	L3	D	C	E
15	376	Φ57	G 1/2"	400	Φ58	Φ17	425	Φ95	Φ65	4-Φ14
			*G 3/8"					Φ88.9	Φ60.5	4-Φ16
			*NPT 1/2"					Φ95.2	Φ66.5	4-Φ16
25	376	Φ73	G 1"	450	Φ74	Φ30	425	Φ115	Φ85	4-Φ14
			*G 3/4"					Φ108	Φ79.2	4-Φ16
			*NPT 1"					Φ123.9	Φ88.9	4-Φ19
40	376	Φ91	G 1-1/2"	450	Φ92	Φ44	425	Φ145	Φ110	4-Φ18
			*NPT 1-1/2"					Φ127	Φ98.6	4-Φ16
50	376	Φ112	G 2"	450	Φ112	Φ54	425	Φ160	Φ125	4-Φ18
			*NPT 2"					Φ152.4	Φ120.7	4-Φ19



Note: If you choose to connect with "*", please indicate the size on the order.

LZB-VA/FA/WA30S Series Glass Flow Meter Installation Dimensions and Structural Diagram

Diameter (DN) mm	Display Size a × b	VA30S Pipe Thread Connection			FA30S Flange Connection				WA30S Sanitary Quick-Connect Joint		
		L1	C	D	L2	E	F	n-G	L3	J	K
15	27.5 ×	344	Φ38	G 1/2"	348	Φ65	Φ95	4-Φ14	376	50.5	3/4"
25	235	348	Φ55	G 1"	348	Φ85	Φ115	4-Φ14	376	50.5	1"
40	54 × 225	370	Φ70	G 1-1/2"	370	Φ110	Φ145	4-Φ18	376	50.5	1-1/2"
50	56 × 236	380	Φ90	G 2"	380	Φ125	Φ160	4-Φ18	376	64	2"



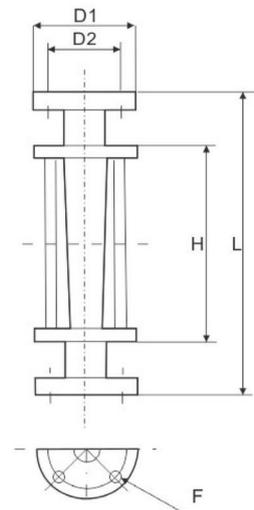
LZB Glass Tube Flow Meter

LZB-FA100 Glass Flow Meter

This series of flow meters features high sensitivity, wide measurement range, low pressure loss, and convenient use and maintenance. Generally, it is used to measure transparent liquids or gases that are low pressure, high temperature, and do not contain suspended particles. It is widely applied in industries such as petroleum, chemical, electronics, environmental protection, electric power, and pharmaceuticals.

LZB-FA100 Glass Flow Meter Technical Parameters

Diameter (mm)	Measurement Range		Working Pressure (MPa)
	Water (L/h)	Air (NL/min)	
15	30-300	10-100	≤ 0.8
	60-600	20-200	
	80-800	25-250	
20	90-900	20-200	
	120-1200	30-300	
	180-1800	50-500	
25	180-1800	50-500	
	300-3000	100-1000	
	480-4800	150-1500	
32	480-4800	200-2000	
	600-6000	250-2500	
	720-7200	300-3000	
40	1-10 m ³ /h	18-180 Nm ³ /h	
	1.2-12 m ³ /h	20-200 Nm ³ /h	
	1.5-15 m ³ /h	25-250 Nm ³ /h	
50	1.2-12 m ³ /h	20-200 Nm ³ /h	
	1.5-15 m ³ /h	25-250 Nm ³ /h	
	1.8-18 m ³ /h	30-300 Nm ³ /h	
65	1.8-18 m ³ /h	25-250 Nm ³ /h	≤ 0.4
	3-30 m ³ /h	35-350 Nm ³ /h	
	4-40 m ³ /h	40-400 Nm ³ /h	
80	4-40 m ³ /h	40-400 Nm ³ /h	
	5-50 m ³ /h	50-500 Nm ³ /h	
	6-60 m ³ /h	60-600 Nm ³ /h	
100	6-60 m ³ /h	60-600 Nm ³ /h	
	7-70 m ³ /h	70-700 Nm ³ /h	
	10-100 m ³ /h	90-900 Nm ³ /h	



LZB-FA100 Glass Flow Meter Installation Dimensions (mm)

Model	FA100-15	FA100-20	FA100-25	FA100-32	FA100-40	FA100-50	FA100-65	FA100-80	FA100-100
L	260	340	340	340	340	340	390	390	410
H	150	200	200	200	200	200	250	250	250
D1	95	105	115	135	145	160	180	185	205
D2	65	75	85	100	110	125	145	150	170
F	4-Φ14	4-Φ14	4-Φ14	4-Φ18	4-Φ18	4-Φ18	4-Φ18	4-Φ18	4-Φ18

Variable Area Flow Meter with Alarm Limit Switch

Working Principle of Variable Area Flow Meter with Alarm Limit Switch

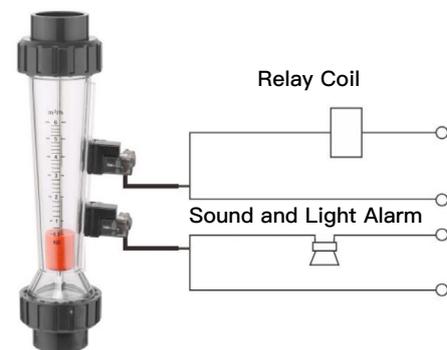
Working Principle: The variable area flow meter with alarm limit switch utilizes the bistable magnetic control function of the magnetron to achieve the opening and closing of contacts with the magnetic float, and cooperates with relays and other components to meet the requirements for sound and light alarms.

Precautions

- When installing, try to keep away from devices that may cause external magnetic field interference like large electric motors.
- The fluid medium must not contain ferromagnetic impurities.
- The installation on the pipeline should be free of vibrations to prevent false triggering of the switch contacts.

Flow Alarm Switch

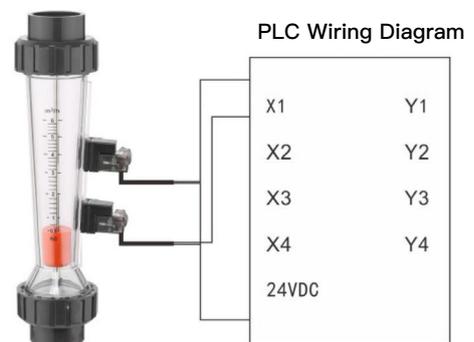
Used for upper and lower limit alarms in LZM and LZS series.



Reliable Flow Measurement Values

The bistable switch can meet various usage requirements. This switch is mounted on the measuring tube's dovetail guide rail, and the flow rate can be set arbitrarily. It is easy to install, reliable, and convenient for adding upper and lower limit alarms to existing equipment. The flow switch can send signals at any flow rate value, whether maximum, minimum, or intermediate.

This product is installed on the measuring tube's dovetail guide rail of the LZM and LZS series flow meters. When the float reaches or exceeds the limit switch position, a signal is emitted. At this time, the internal contact will open or close. Thanks to the new magnetic induction technology, the float is no longer used separately for monostable and bistable applications, as was the case in the past.



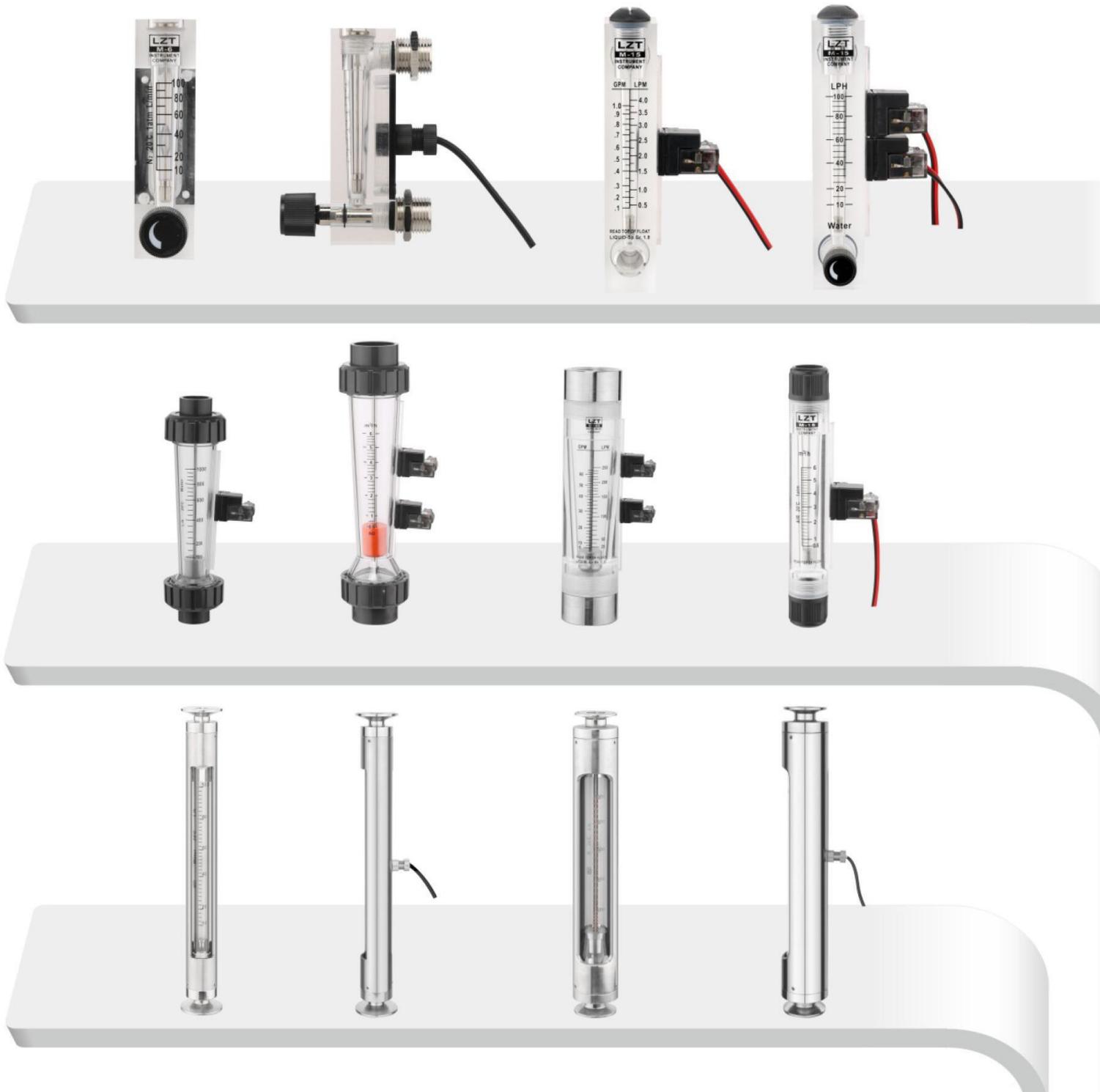
Applications and Functions

Upper Limit Alarm: When the magnetic float is at the set position of the limit switch, the contacts close. When the magnetic float is above the set position of the limit switch, the contacts remains closed. When the magnetic float is below the high set position of the limit switch, the contacts open.

Lower limit alarm: When the magnetic float is at the set position of the limit switch, the contacts close. When the magnetic float is below the set position of the limit switch, the contacts remains closed. When the magnetic float is above the high limit set position of the limit switch, the contacts open.

Technical Parameters	
Insulation Resistance: > 10 ⁹ Ω	Operating Voltage: max. DC24/AC24
Operating Temperature: 0 °C – 55 °C	Operating Current: max. 0.3A
Protection Level: IP65	Constant current during switching: max. DC0.1A
Hysteresis (open and closed positions): 4 mm	Cut-off power: max. 1VA
Dimensions: 45 x 20 x 45	Forward resistance: < 200Ω

Variable Area Flow Meter With Alarm Limit Switch



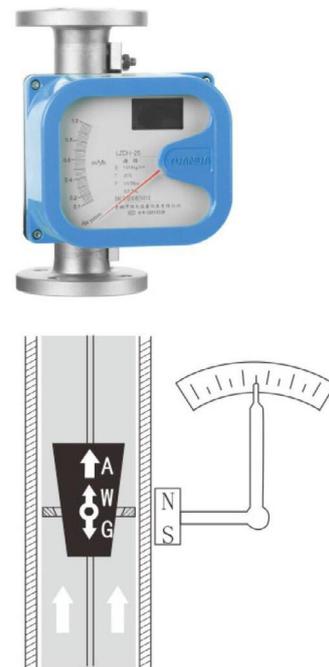
LZ Variable-Area Flow Meter

Overview

The LZ series metal tube flow meters (also known as metal rotor meters) feature a simple structure, reliable operation, wide applicability, high accuracy, and convenient installation. Compared to glass flow meters, this series of flow meters has advantages such as high pressure resistance, high temperature resistance, a strong sense of security, and clear readings. It is also suitable for flow measurement of opaque and corrosive media. The instrument body and flange are made of stainless steel (ICr18Ni9Ti or 0Cr18Ni12Mo2Ti). The float is made of stainless steel, and the corrosion-resistant float and the tube inner lining are made of PTFE.

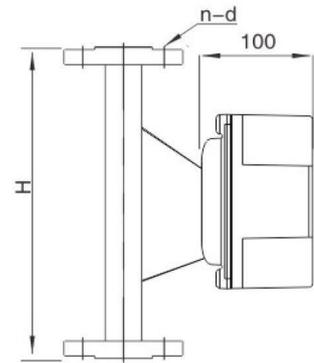
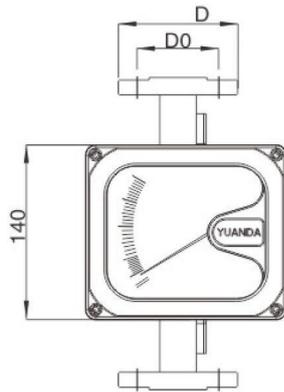
Working Principle

As shown in Figure 1, it consists of two parts: the flow sensor and the flow indicator. The float is vertically installed in the conical measuring tube, and it can float freely up and down in the tapered tube due to the action of the fluid. A high-performance permanent magnet is embedded inside the float, and as the float moves up and down, the magnetic field generated around it also changes. When the flow tends to stabilize, and the float is in a dynamic equilibrium, the magnetic field distribution around it also reaches a steady state. The flow indicator, mechanically connected to the tapered measuring tube, can transmit the magnetic signal of the float in a non-contact manner. In other words, the indicator can detect and process the flow rate of the fluid through magnetic transmission, ultimately displaying the flow rate on the indicator's dial via a pointer, while the LCD also reads out the instantaneous and accumulated flow values, outputting a standard two-wire (4-20)mA signal/HART protocol.

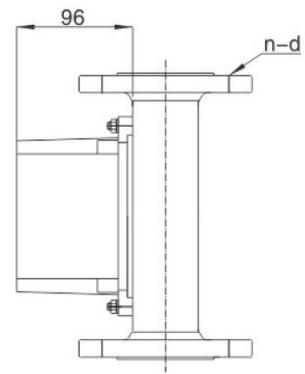
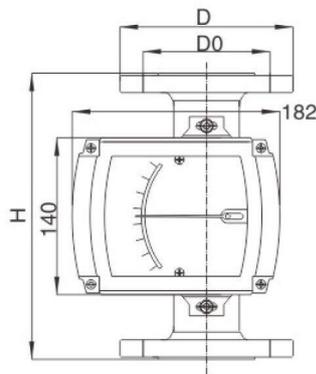


Model	LZZH	LZDH
Diameter	DN15–150 mm	DN15–150 mm
Measurement range	See LZ _Z H series flow range table	See LZ _D H series flow range table
Accuracy	Grade 2.5, special order grade 1.0 (liquid)	Grade 2.5, special order grade 1.0 (liquid)
Max. working pressure	1.6–4.0 MPa (by diameter)	1.6–4.0 MPa (by diameter)
Medium Temperature	Standard type: -40 °C to +100 °C High temperature type: -80 °C to +250 °C	Standard type: -40 °C to +100 °C High temperature type: -80 °C to +250 °C
Ambient Temperature	-25 °C to +65 °C	-25 °C to +65 °C
Connection Method	Flange, GB/T9115.1-2010	Flange, GB/T9115.1-2010
Cable interface	M20 x 1.5 (customizable upon special request)	M20 x 1.5 (customizable upon special request)
Protection level	IP65	IP65
Explosion-proof level	Explosion-proof: Exd II BT4	Explosion-proof: Exd II BT4
Medium viscosity	DN15 ≤ 5 mPa.s DN25–150 ≤ 250 mPa.s	DN15 ≤ 5 mPa.s DN25–150 ≤ 250 mPa.s
Power Supply Method	None	DC24V
Measuring Tube Material	304, 316, PTFE or F46 lining	304,316, PTFE or F46 lining
Float Material	304 or 316, PTFE or F46	304 or 316, PTFE or F46
Indicator Material	Aluminum alloy	Aluminum alloy
Product Implementation Standard	JB/T6844-2015 (Industry Standard)	JB/T6844-2015 (Industry Standard)
Display	Pointer Indication	Pointer indication, LCD display of instantaneous and cumulative flow
Output Signal	None	Two-wire 4-20mA current

LZ₅H Metal Rotor Flow Meter (M1 Indicator)



LZ₅H Metal Rotor Flow Meter (M2 Indicator)

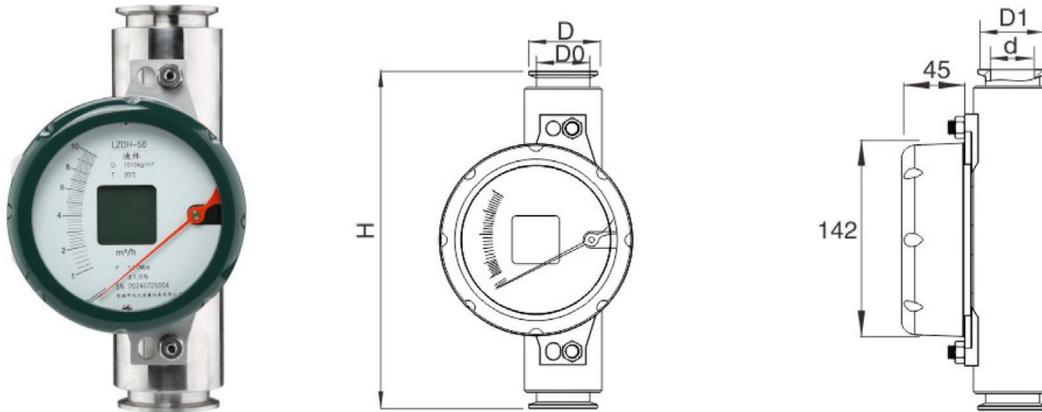


Flange Type Vertical and Horizontal Dimensions

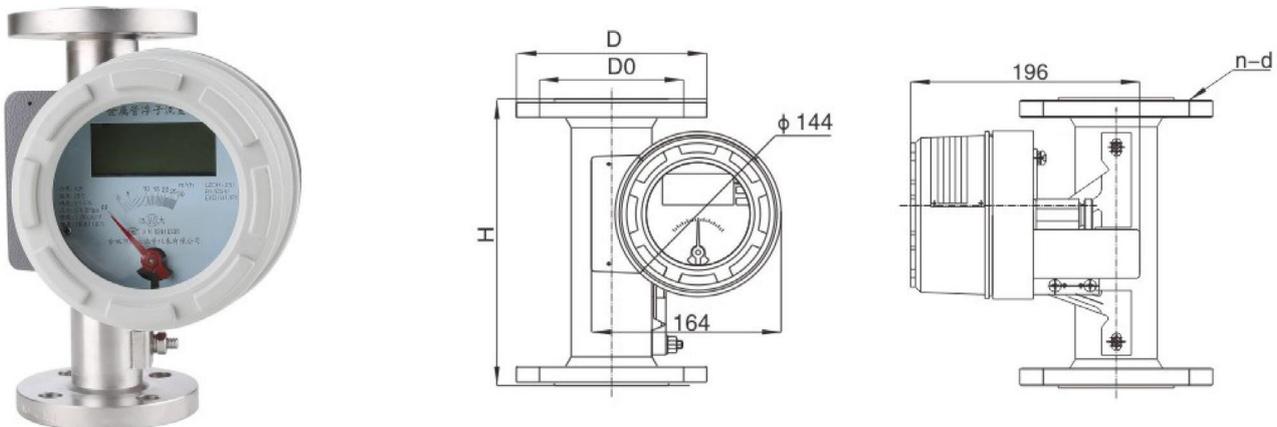
(mm)

Diameter DN	Pressure Resistance MPa	H	D	D0	n-d	Body Gross Weight kg
15	4.0	250	Φ95	Φ65	4-Φ14	4.3
25	4.0	250	Φ115	Φ85	4-Φ14	6.25
40	4.0	250	Φ150	Φ110	4-Φ18	8.2
50	4.0	250	Φ165	Φ125	4-Φ18	9.2
80	1.6	250	Φ200	Φ160	8-Φ18	13
100	1.6	250	Φ220	Φ180	8-Φ18	15
150	1.6	300	Φ285	Φ240	8-Φ22	40

Clamp Type LZ₂H Series (M3 Indicator)



LZ₃H Series (M3S Indicator)



Clamp Type Dimensions Table

(mm)

Diameter DN	Pressure Resistance MPa	D0	d	H	D	D1
15	2.5	φ37.5 (25)	φ18 (22)	250	φ50.5 (50.5)	φ43.5 (43.5)
25	2.5	φ54.5 (32)	φ28 (29)	250	φ63.5 (50.5)	φ56 (43.5)
40	2.5	φ65 (38)	φ43 (35)	250	φ77.5 (50.5)	φ70 (43.5)
50	2.5	φ80 (51)	φ51 (48)	250	φ91 (64)	φ82.5 (56.5)
80	1.6	φ102 (89)	φ90 (85)	250	φ119 (106)	φ110 (97)

Note: Special clamp pipe connectors can be customized.

LZ Variable-Area Flow Meter

LZ_DH Series Measurement Range Table

Diameter (mm)	Flow range			Pressure Loss kPa		
	Water L/h*		Air m ³ /h*	Water		Air
	Normal Temperature Type	Corrosion-Resistant Type	Normal Temperature Type, Corrosion-Resistant Type	Normal Temperature Type	Corrosion-Resistant type	
15	2.5-25	2.5-25	0.07-0.7	6.5	5.5	7.1
	4.0-40	4.0-40	0.11-1.1	6.5	5.5	7.2
	6.3-63	6.3-63	0.18-1.8	6.6	5.6	7.3
	10-100	10-100	0.28-2.8	6.6	5.6	7.5
	16-160	16-160	0.48-4.8	6.8	5.8	8
	25-250	25-250	0.7-7	7	6.1	10.8
	40-400	40-400	0.1-10	8.6	7.3	10
	63-630	-	1.6-16	11.1	-	14
25	80-800	-	-	13.1	-	-
	40-400	63-630	3-30	7	5.9	7.7
	63-630	100-1000	4.5-45	7	6	8.8
	80-800	160-1600	7-70	7	6.8	12
	100-1000	250-2500	11-110	7	9.2	19
	160-1600	-	-	8	-	-
	250-2500	-	-	10.8	-	-
	400-4000	-	-	15.8	-	-
40	500-5000	-	-	20.4	-	-
	600-6000	-	-	25.6	-	-
	160-1600	300-3000	12-120	10.8	8.6	9.8
	250-2500	350-3500	16-160	10.8	10.4	16.5
	400-4000	-	-	10.8	-	-
50	500-5000	-	-	10.8	-	-
	600-6000	-	-	12.6	-	-
	1000-10000	-	-	15.8	-	-
	400-4000	400-4000	18-180	8.1	6.8	8.6
	630-6300	630-6300	25-250	8.1	9.4	10.4
80	1000-10000	1000-10000	40-400	11	14.5	15.5
	1600-16000	-	-	17	-	-
	2000-20000	-	-	19	-	-
	1000-10000	1600-16000	60-600	8.1	6.9	12.9
	1600-16000	2500-25000	80-800	8.1	8	18.5
	2500-25000	-	-	8.1	-	-
100	4000-40000	-	-	9.5	-	-
	6000-60000	-	-	21	-	-
	7000-70000	-	-	26	-	-
	4000-40000	4000-40000	-	15	8.5	-
	6300-63000	-	-	15	-	-
150	10000-100000	-	-	20	-	-
	10000-100000	-	-	19.2	-	-
	15000-150000	-	-	25	-	-
	18000-180000	-	-	30	-	-

Note: *Water at 20 °C, Air at 101325 Pa, 20 °C, special flow rates can be specially ordered.

LZ Variable-Area Flow Meter

LZZX Series Micro Flow Meter



Model	LZZX Series Micro Flow Meter
Diameter	DN6–10 mm
Measurement Range	See LZZX Series Flow Range Table
Accuracy	2.5 Grade / 4.0 Grade
Maximum Working Pressure	16 MPa
Medium Temperature	-40 °C to +120 °C
Ambient Temperature	-40 °C to +80 °C
Connection Method	1/4" NPT, 1/2" NPT, 3/4" NPT, 1" NPT
Cable Interface	–
Protection Level	–
Explosion-Proof Level	–
Medium Viscosity	1/2" NPT ≤ 5 mPa.s, 1" NPT ≤ 250 mPa.s
Power Supply Method	–
Measuring Tube Material	304, 316
Float Material	304 or 316
Indicator Material	Stainless Steel or Aluminum Alloy
Product Implementation Standard	JB/T6844-1993 (Ministry of Machinery Department Standard)
Display	Pointer Indication
Output Signal	–

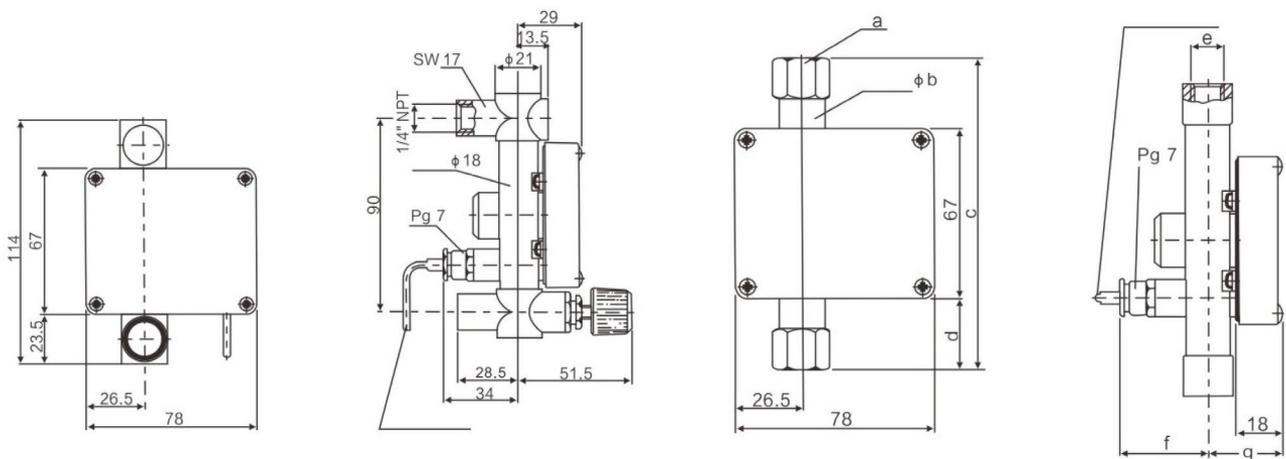
LZ Variable-Area Flow Meter

LZZX Series Flow Range Table

Model	Flow Range (Water)	a	b	C	d	e	f	g	Mounting Method
LZZX-6	≤100 L/h	SW19	18	125	29	NPT 1/4"	34	29	Bottom Inlet, Top Outlet Side Inlet, Side Outlet
LZZX-10	100–300 L/h	SW24	25	164	40	NPT 3/8"	30.5	32.5	Bottom Inlet, Top Outlet

LZZX Series Flow Meter Technical Parameters

Model	Measurement Range		Pressure Loss mbar	Connection Thread
	Water (L/h)	Air (L/h)		
LZZX-6	0.1–1	3.5–35	8	Female NPT 1/4"
	0.16–1.6	5.4–54	8	
	0.25–2.5	10–100	8	
	0.4–4	16–160	8	
	0.6–6	23–230	8	
	1–10	35–350	8	
	1.6–16	54–540	8	
	2.5–25	85–850	9	
	4–40	125–1250	10.5	
	6–60	190–1900	12.5	
LZZX-10	10–100	310–3100	17	Female NPT 3/8"
	10–100	320–3200	8	
	16–160	500–5000	8	
	20–200	600–6000	8	
	25–250	800–8000	8	
	30–300	900–9000	8	



LZ Variable-Area Flow Meter

Selection Instructions

LZ **A** — **B** / **C** / **D** / **E** / **F** / **G** / **H**

A. Series Selection

ZH: Orifice Float, Local Indication

DH: Orifice Float Type, Electric Remote Transmission with Local Indication

B. Diameter and Installation Type

Code	DN	Code	DN
015	15	080	80
025	25	100	100
040	40	150	150
050	50	—	—

Note: LZZH/LZDH series, no letter after the nominal diameter indicates vertical basic type; if a letter is added, it indicates a special connection type.

S indicates horizontal type (DN15–100)

L indicates threaded type (DN15–100)

K indicates clamp type (DN15–100)

C. Selection of Measuring Tube Material

R1: 304 Stainless Steel

R0: 316 Stainless Steel

F: PTFE or F46 lining (only applicable to LZZH/LZDH vertical basic type series)

D. Indicator Type

M1: Square aluminum alloy shell linear indicator

M2: Rectangular aluminum alloy shell linear indicator

M3S: Round cast aluminum shell intelligent remote transmission explosion-proof indicator

M3: Round aluminum alloy shell linear indicator

E. Selection of Remote Transmission Transmitters

Es4 electric remote transmission: 4-20mA

Two-wire 24VDC power supply (corresponding to LZDH)

F. Explosion-proof Type

Exi intrinsically safety type associated equipment LB987S Safety barrier matching explosion-proof grade Exib II CT4

Exd Explosion-proof type (only M3S indicator can be selected, Explosion-proof grade: Exd I BT4)

G. Selection of Medium State

A: Air (for measuring gas, it is recommended to use LZZH/LZDH series, and select a damper)

L: Liquid

H. Selection of Flow Range

Fill in the measurement range and units, you can refer to the flow specification table

LW Turbine Flow Meter

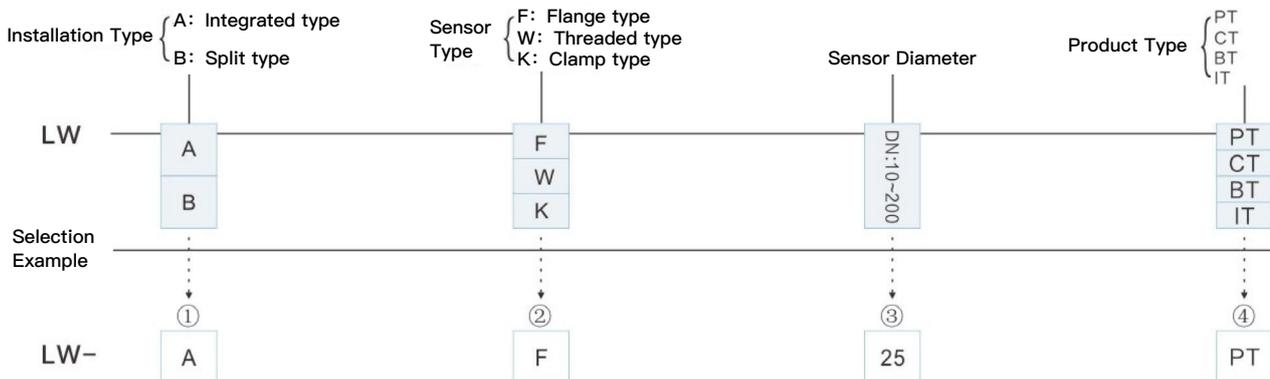
Overview

The LW series turbine flow meter is a velocity-type measuring instrument used to measure the volumetric flow rate of liquids flowing continuously in a closed pipeline. Turbine flow sensors are suitable for measuring low-viscosity liquids, featuring high accuracy and the ability to withstand high working pressures. The front-end amplifier has pulse output and 4-20mA standard current signal output types. The flow detectors come in standard, wear-resistant, and corrosion-resistant types. In terms of the wear-resistant type, except for the shaft made of hard alloys, it is also equipped with an impeller that has an appropriate back thrust, making it more suitable for measuring liquids with poor lubrication properties like gasoline.



LW- Turbine Flow Meter Technical Parameters

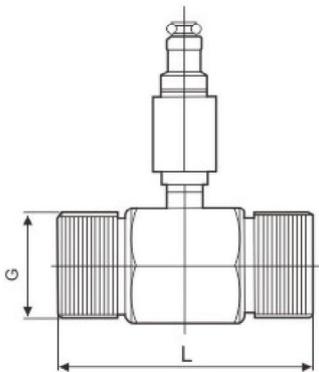
Diameter DN (mm)	Flow Range (m ³ /h)		Fluid Temperature (°C)	Working Pressure (MPa)	Ambient Temperature (°C)	Maximum Pressure Loss (MPa)
	Tolerance 0.5%	Tolerance 1.0%				
4*	—	0.04–0.25	-20 °C to 100 °C	6.3	-25 °C to 55 °C	0.08
6*	0.1–0.6	0.1–0.6		16*		
10	0.25–1.2	0.2–1.2		25		
15	0.6–4	0.4–4		40*		0.035
20	1.1–7	0.7–7		6.3, 2.5 (flange)		
25	1.6–10	1–10				
32	2.5–16	1.6–16				2.5, 1.6 (flange)
40	3–20	2.5–25				
50	4–40	4–40		1.6		0.025
65	6–60	6–60				
80	10–100	10–100				
100	20–160	16–160				
150	50–300	40–400				
200	100–600	80–800				



LW Turbine Flow Meter

LW Series Turbine Flow Meter Product Types

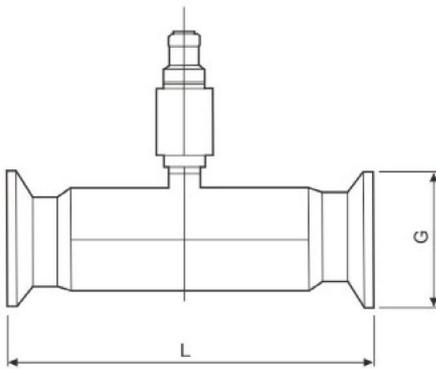
1. BT Battery-Powered Type: Local display of instantaneous flow rate and total flow, no output signal.
2. IT Intelligent Type: 24V DC power supply, can output 4-20mA current, pulse, RS485, and display instantaneous flow rate and total flow on the panel.



Thread Connection Dimensions

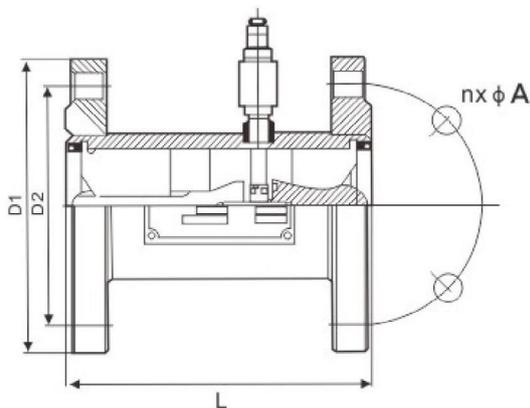
DN	4*	6	8	10	15	20
G	1/4"	1/4"	1/4"	3/8"	1/2"	3/4"
L (mm)	80	80	80	80	110	133

DN	25	32	40	50	65	80
G	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"
L (mm)	150	172	185	200	235	260



Ferrule Connection Dimensions mm

DN	G	L
10	50.5	50
15	50.5	75
20	50.5	85
25	50.5	100
32	50.5	120
40	64	140
50	77.5	150
65	91	175
80	106	200
100	119	220



Flange Connection Dimensions mm

DN	D1	D2	n x φA	L
10	90	60	4 x 14	345
15	95	65	4 x 14	75
20	105	75	4 x 16	85
25	115	85	4 x 16	100
32	140	100	4 x 18	120
40	150	110	4 x 18	140
50	165	125	4 x 20	150
65	185	145	4 x 20	175
80	200	160	8 x 20	200
100	220	180	8 x 22	220
150	285	240	8 x 24	300
200	340	295	12 x 26	360

LD Series Electromagnetic Flow Meter

Overview

The LD electromagnetic flow meter consists of a sensor and a converter. It operates based on Faraday's electromagnetic induction law to measure the volumetric flow rate of conductive liquids with a conductivity greater than 5 $\mu\text{s}/\text{cm}$, and is an inductive instrument for measuring the volumetric flow rate of conductive media. In addition to measuring the volumetric flow rate of general conductive liquids, it can also be used to measure the volumetric flow rate of strongly corrosive liquids such as strong acids and strong alkalis, as well as homogeneous liquid-solid two-phase suspensions such as slurries, mineral slurries, and pulps. Flow measurement is widely used in industrial sectors such as petroleum, chemical industry, metallurgy, light textile, papermaking, environmental protection, food, as well as in municipal management, water conservancy construction, and river dredging.

Product Execution Standard: JB/T9248-1999 (Ministry of Machinery Industry Standard)

Flange Standard: GB/T9115.1-2000 (National Standard)

LD Series Electromagnetic Flow Meter Technical Parameters

Diameter	DN15–DN2200
Electrode Material	316L, Hb, Hc, Ti, Ta, Pt
Lining Material	CR, PU, PTFE, PFA, F46
Medium	Conductive Liquid
Medium Conductivity	$\geq 5 \mu\text{s}/\text{cm}$
Accuracy	$\pm 0.5\%$ to $\pm 1.0\%$
Flow Velocity Range	0.3 m/s – 5 m/s (Extended to 10 m/s)
Working Temperature	Integrated type $\leq 120^\circ\text{C}$, Split type $\leq 150^\circ\text{C}$ (Rubber 80°C)
Working Pressure	0.6 MPa – 4.0 MPa (by diameter)
Protection Level	IP65, IP67, IP68 (Split type)
Output Signal	4-20mA/frequency/pulse output/RS485 communication
Power Supply	220V AC, 24V DC
Installation Form	Integrated, split

Integrated type

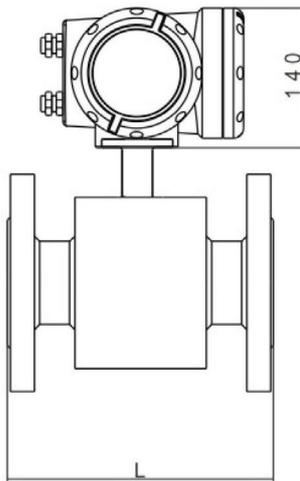


Split type

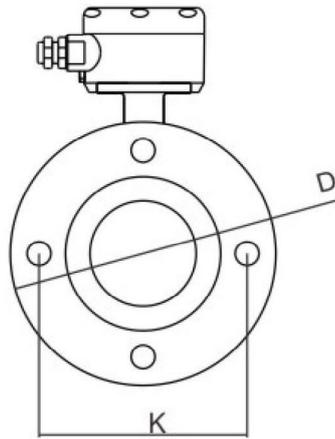


LD Series Electromagnetic Flow Meter

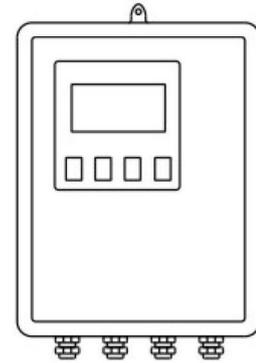
LD Series Electromagnetic Flow Meter Size Diagram and Flow Selection Table



Integrated type



Split type



Model	Working Pressure MPa	L	D	K	Number & Diameter of Installation Holes	Flow Range m ³ /h
15	4.0	200	95	65	4-φ14	0.32-3.2
20		200	105	75	4-φ14	0.56-5.6
25		200	115	85	4-φ14	0.9-9
32		200	140	100	4-φ18	1.5-15
40		200	150	110	4-φ18	2.3-23
50		200	165	125	4-φ18	3.5-35
65		200	185	145	8-φ18	6-60
80		200	200	160	8-φ18	9-90
100	1.6	250	220	180	8-φ18	14-140
125		250	250	210	8-φ18	20-200
150		300	285	240	8-φ22	30-300
200	1.0	350	340	295	8-φ22	56-560
250		400	395	350	12-φ22	90-900
300		500	445	400	12-φ22	125-1250
350		500	505	460	16-φ22	175-1750
400		600	565	515	16-φ26	230-2300
450		600	615	565	20-φ26	290-2900
500		600	670	620	20-φ26	350-3500
600		600	780	725	20-φ30	510-5100
700		700	895	840	20-φ30	700-7000
800		800	1015	950	24-φ30	900-9000
900	900	1115	1050	28-φ33	1150-11500	
1000	1000	1230	1160	28-φ36	1400-14000	
1200	0.6	1200	1405	1340	32-φ36	2000-20000
1400		1400	1630	1560	36-φ36	2800-28000
1600		1600	1830	1760	40-φ36	3600-36000
1800		1800	2045	1970	44-φ39	4600-46000
2000		2000	2265	2180	48-φ42	5600-56000
2200		0.25	2200	2405	2340	52-φ33

LD Series Electromagnetic Flow Meter

Model Selection and Description

LD — **A** / **B** / **C** / **D** / **E** / **F** / **G** / **H**

LD: Pipeline Connection Method

LD: Flange Type LDJ: Clamp-on Type LDL: Threaded Type LDK: Hoop collar Type LDC: Insertion Type

A. Diameter Code

Refer to flow selection table

B. Flow Meter Structure

Y: Integrated Type F: Split Type

C: Power Supply

AC:220V AC (90–245V 50/60Hz) DC:24V DC (20–36V)

D: Explosion-proof Requirements

N: No explosion-proof Ex: Explosion-proof (Integrated explosion-proof can only select ZA converter)

E: Lining Material

NE ($\leq 65\text{ }^{\circ}\text{C}$, DN50–2000) PTFE ($\leq 120\text{ }^{\circ}\text{C}$, DN10–600) PUNE ($\leq 65\text{ }^{\circ}\text{C}$, DN25–800) PFA ($\leq 120\text{ }^{\circ}\text{C}$, DN10–300)
F46 ($\leq 180\text{ }^{\circ}\text{C}$, DN20–300)

F: Electrode Material

316L: Stainless Steel TUC: Tungsten Carbide Ti: Titanium Ta: Tantalum HC: Hastelloy C HB: Hastelloy B
Pt: Platinum

G: Grounding Ring or Grounding Electrode

N: Rubber lining generally not equipped with grounding ring
S1: 304 stainless steel grounding ring
S2: 316L stainless steel grounding ring
S3: Select 3-electrode structure, one of which is a grounding electrode
S4: Select PVC plastic ring with built-in grounding electrode structure

H: Full Scale Flow Rate (Refer to Flow Selection Table on Previous Page)

LD Series Electromagnetic Flow Meter

Selection of Electrode Material (should be based on the fluid being measured)

Material	Corrosion Resistance
316L	Applicable: 1. Domestic water, industrial water, raw well water, municipal sewage 2. Weakly corrosive acids, bases, and salt solutions
Hastelloy B	Applicable: 1. Salt solutions (concentration less than 10%), all concentrations of sodium hydroxide solutions 2. Sodium hydroxide (concentration less than 50%) 3. Phosphoric acid, organic acids Not applicable: Nitric acid
Hastelloy C	Applicable: 1. Mixed acids such as chromic acid and sulfuric acid mixtures 2. Oxidizing salts such as Fe ⁺⁺ , Cu ⁺⁺ , seawater Not applicable: Hydrochloric acid
Titanium	Applicable: 1. Salts, such as (1) sodium chloride (chlorides/magnesium, aluminum, calcium, ammonium, titanium, etc.) 2. Sodium salts, potassium salts, ammonium salts, hypochlorites, seawater, solutions of potassium hydroxide, sodium hydroxide, and barium hydroxide with a concentration of less than 50%
Tantalum	Applicable: 1. Hydrochloric Acid (concentration less than 40%), dilute sulfuric acid and concentrated sulfuric acid (not including fuming sulfuric acid) 2. Sodium dioxide, magnesium chloride, hypochlorous acid, sodium cyanide, lead acetate, etc. 3. Oxidizing acids such as nitric acid (including fuming nitric acid) and aqua regia at temperatures below 80 °C
Platinum	Applicable: Almost all acids, bases, and salt solutions (including fuming sulfuric acid and fuming nitric acid) Not applicable: Aqua regia, ammonium salts

Selection of lining materials (should be based on the corrosiveness, abrasiveness, and temperature of the medium)

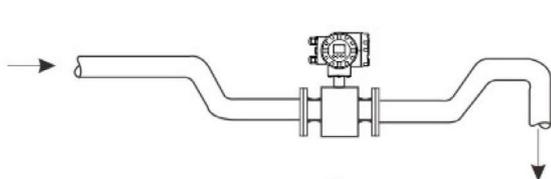
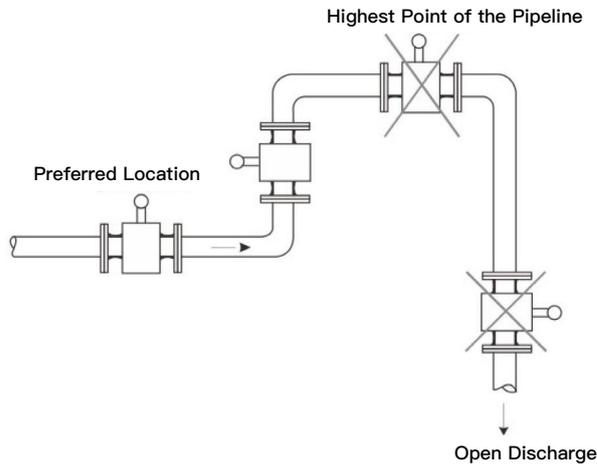
Lining Material	Name	Symbol	Performance	Maximum Working Temperature	Operating Liquid	Applicable Caliber
Rubber	Chloroprene Rubber	CR	Moderate wear resistance, resistant to general low concentration acid, base, and salt corrosion	80 °C	Tap water, industrial water, seawater	DN50–DN2200
	Polyurethane rubber	PU	Excellent wear resistance, poor acid and alkali resistance	60 °C	Pulp, slurry, and other slurries	DN25–DN500
	Food-grade Rubber	VULKODURIT	Excellent wear resistance, stable chemical properties	100 °C	Alcohol, beverages, and other edible liquids	DN40–DN1000
Fluoroplastic	Polytetrafluoroethylene	F4 or PTFE	Chemically stable, resistant to boiling hydrochloric acid, sulfuric acid, aqua regia, and concentrated alkali corrosion	180 °C	Strongly corrosive acid, alkali, and salt liquids	DN25–DN500
	Perfluoroethylene Translation: Teflon FEP	F46 or F EP	Chemical performance is slightly inferior to F4	120 °C	Corrosive alkaline salt liquids	DN15–DN2200
	Soluble polytetrafluoroethylene	PFA	Chemical performance is similar to FTFE, with good negative pressure resistance	200 °C	Strongly corrosive media such as concentrated acids and alkalis	DN10–DN500

LD Series Electromagnetic Flow Meter

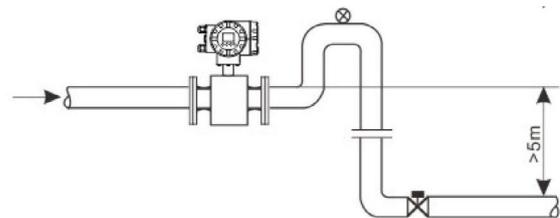
Selection of Installation Location

To ensure the reliable and stable operation of the transmitter, the following aspects should be considered when selecting the installation location:

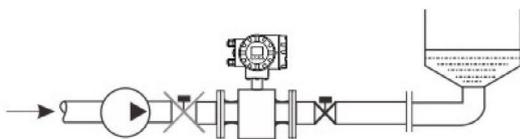
- (1) Avoid ferromagnetic objects and equipment with strong electromagnetic fields (such as large motors and transformers) as much as possible to prevent the magnetic field from affecting the sensor's working magnetic field and flow signal.
- (2) It should be installed in a dry and well-ventilated area, and not in damp places where water can accumulate.
- (3) It should be protected from direct sunlight and rain, and the ambient temperature should not exceed 60°C and the humidity shall not be greater than 95%.
- (4) Choose a location that is convenient for maintenance and easy to access.
- (5) The flow meter should be installed at the downstream side of the pump and must not be installed on the suction side; valves should be installed downstream of the flow meter.



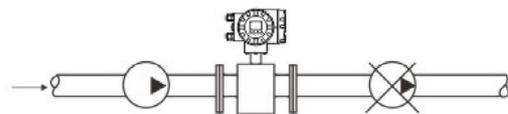
Open Inlet or Discharge
Install the instrument in the lower section of the pipeline.



The length of the descending pipeline should exceed 5 meters.
Install a vent valve (vacuum) downstream of the flow meter.



Long Pipeline System
Typically, control valves and shut-off valves are installed downstream of the flow meter.



Pump
Never install the flow meter at the suction side of the pump (vacuum!)

LUGB Vortex Flow Meter

Application & Features

The LUGB series vortex flow transmitter is primarily used for measuring the flow of fluid media in industrial pipelines, including gases, liquids, and steam. Its key features include low pressure loss, a wide measurement range, and high accuracy. When measuring volumetric flow under operating conditions, it is nearly unaffected by parameters such as fluid density, pressure, temperature, and viscosity.

With no moving mechanical parts, the transmitter offers high reliability and requires minimal maintenance. Its instrument constant remains stable over the long term. The device employs a piezoelectric stress sensor, ensuring high reliability and operation within a temperature range of -20 °C to +300 °C. It provides both analog standard signals and digital pulse signal outputs, making it easy to integrate with computers and other digital systems. This makes it an advanced and ideal flow measurement instrument.



Working Principle

When a cylindrical bluff body is inserted vertically into a fluid, vortices are alternately generated on both sides of the body. These vortices move downstream with the fluid flow, forming a vortex street known as a Kármán vortex street, as shown in Figure 1. The bluff body that generates the vortex is referred to as the vortex generator. Experiments have shown that the frequency of vortex shedding is proportional to the flow velocity and can be expressed by the following formula:

$$f = Sr \frac{V}{(1 - \frac{4d}{\pi D})d}$$

In the formula:
 f- vortex frequency
 V- average flow velocity in the pipe
 d- width of the leading edge of the column body
 D- inner diameter of the pipe
 Sr- Strouhal number

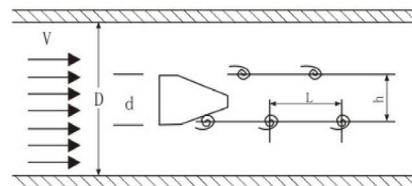


Figure 1: Schematic diagram of vortex formation

Experiments have shown that when the distance h between two rows of vortices and the distance L between two vortices in the same row satisfy the formula $h/L = 0.281$, the asymmetric vortex array can maintain a stable state. When the Reynolds number Re of the fluid is in the range of 5000–150000, Sr remains essentially constant. Therefore, when the width d of the vortex generator and the Strouhal number Sr are constant, the frequency f of the vortex generator is proportional to the average flow velocity of the fluid, which is also proportional to the flow rate Q , and is independent of parameters such as pressure, temperature, and density.

When vortices are generated on both sides of the cylinder, the sensor is subjected to an alternating lift force perpendicular to the flow direction, which induces a signal. The frequency of the lift force variation is the vortex frequency. The sensor sends the signal to the converter, which amplifies and shapes it, resulting in a pulse signal that is directly output in linear proportion to the flow velocity or converted into a 4-20mA standard signal output. The relationship between flow rate Q and frequency f is as follows:

$$Q = \frac{f}{k}$$

In the formula:
 Q - instantaneous flow rate (liters/second), f - frequency (Hz), k - instrument constant (times/liter)

The functional block diagram is as follows:

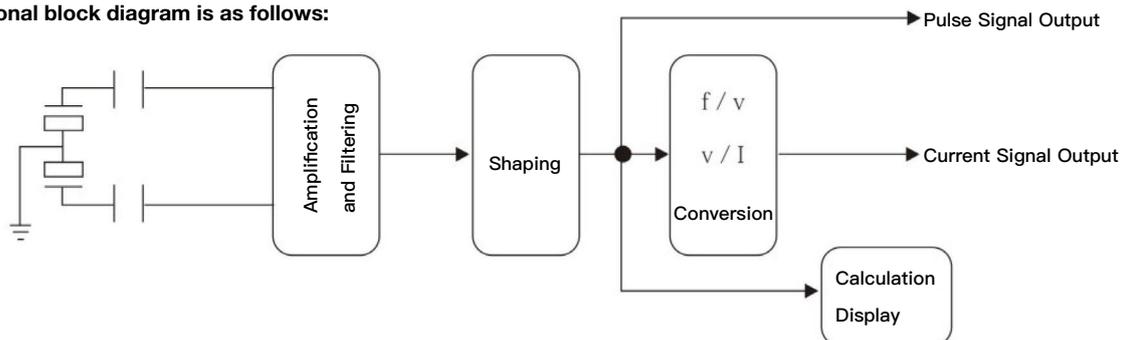


Figure 2: Transmitter Principle Block Diagram

LUGB Vortex Flow Meter

Technical Parameters

Instrument model		LUGB
Measuring medium		Gas, liquid, steam
Diameter specifications	Flanged installation diameter specifications	15, (20), 25, 32, 40, 50, 65, 80, 100, 125, 150, 200
	Flange connection diameter specifications	15, (20), 25, 32, 40, 50, 65, 80, 100, 125, 150, 200, 250, 300, (350)
	Sanitary clamp diameter specifications	25, 32, 40, 50, 65, 80, 100
Flow measurement range	Normal measurement flow velocity range	Reynolds number $1-5 \times 10^4$ to 4×10^6 , gas 5–50 m/s, liquid 0.5–7 m/s.
	Normal measurement flow rate range	Liquid and gas flow measurement ranges are shown in Table 2; steam flow range is shown in Table 3.
Accuracy		Liquid Class 1, Gas Class 1.5
Measured medium temperature		Normal temperature -25 °C to 80 °C, high temperature -2 °C to 250 °C or -25 °C to 300 °C
Working pressure		1.6 MPa; 2.5 MPa; 4.0 MPa (can be produced according to order requirements)
Output signal (signal line interface is M20 × 1.5 female thread)	Pulse voltage output signal	High level 8–10V, low level 0.7–1.3V (explosion-proof type: high level 4–5V, low level 0.7–1.30V) Pulse duty cycle is approximately 50%. Transmission distance is 100 meters.
	Standard current output signal	DC 4-20mA allowable external load resistance less than 600Ω (power supply DC 24V), transmission distance is 3000 meters.
Instrument operating environment		Temperature: -25 °C to 5 °C, Humidity: 5–90% RH 50 °C
Material		The body is made of stainless steel 304. The converter housing is made of aluminum alloy.
Power Supply		DC12V±10%, DC24V±10%, Lithium battery 3. 6V
Explosion-proof level		Intrinsic safety explosion-proof type Exia II CT1-T5, explosion-proof type Exd II BT4
Protection level		IP65

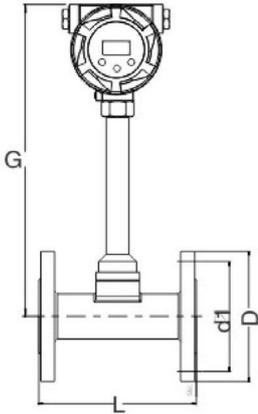
Liquid and Working Gas Flow Range

Diameter DN mm	15	20	25	32	40	50	65
Liquid m ³ /h	0.3–3	0.5–5	1.2–12	5–15	2.2–22	4–40	6–60
Gas m ³ /h	5–30	5.5–56	10.2–80	15–150	22–220	35–350	60–600

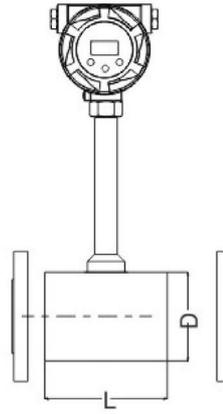
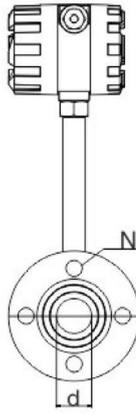
Diameter DN mm	80	100	125	150	200	250	300
Liquid m ³ /h	9–90	14–140	22–220	35–350	65–650	120–1200	180–1800
Gas m ³ /h	90–900	140–1400	220–2200	300–3000	550–5500	1100–11000	1500–15000

LUGB Vortex Flow Meter

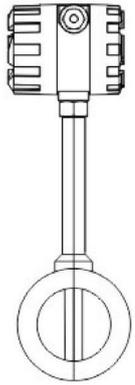
Dimensions Chart



Flange connection type



Flange clamp connection type



Body type	DN mm	Pressure Rating MPa	L (mm)	G		D mm	d1 mm	N	d mm
				Room Temperature	High Temperature				
Flange clamp connection type	15(20)	4.0	65	280	500	86	-	-	15
	25	4.0	65	280	500	86	-	-	25
	32	4.0	75	285	505	80	-	-	32
	40	4.0	75	290	510	84	-	-	40
	50	4.0	75	295	515	93	-	-	50
	65	2.5	75	310	530	107	-	-	65
	80	2.5	75	320	540	118	-	-	80
	100	2.5	90	330	550	138	-	-	100
	125	1.6	100	340	560	163	-	-	125
	150	1.6	115	350	570	188	-	-	150
	200	1.6	135	350	570	238	-	-	200
Flange connection type	15(20)	4.0	170	280	500	95(105)	65(75)	4-φ14	15
	25	4.0	170	280	500	115	85	4-φ14	25
	32	4.0	170	285	505	140	100	4-φ18	32
	40	4.0	180	290	510	150	110	4-φ18	40
	50	4.0	180	295	515	165	125	4-φ18	50
	65	2.5	200	310	530	185	145	8-φ18	65
	80	2.5	200	320	540	200	160	8-φ18	80
	100	2.5	220	330	550	220	180	8-φ18	100
	125	1.6	250	323	545	245	210	8-φ18	125
	150	1.6	300	335	555	280	240	8-φ23	150
	200	1.6	320	370	590	335	295	12-φ12	200
	250	1.6	320	400	620	405	355	12-φ25	250
	300	1.6	320	420	640	460	410	12-φ25	300

LUGB Vortex Flow Meter

Model Selection and Description

LUGB — **A** / **B** / **C** / **D** / **E** / **F** / **G** / **H** / **I**

A. Diameter Marking

Diameter mm	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350
Mark	15	20	25	32	40	50	65	80	100	125	150	200	250	300	350

B. Connection Method

F: Flange type K: Flange clamp type

C: Measured Medium

1: Liquid 2: Gas 3: Saturated Steam 4: Superheated Steam 5: Hot Water

D: Output Signal

-0: No signal output -3: Three-wire pulse -4: Three-wire 4-20mA -5: RS485

E: Indicator Head

N: No indicator head B: Dual-row LCD display intelligent indicator head (instantaneous, accumulated flow)

F: Power Supply Connection

X: 12V DC (only for intelligent digital display indicator head B) Y: 24V DC
Z: Battery (only for intelligent digital display indicator head B)

G: Body Material

-C: OCr18Ni12Mo2Ti (316) -D: 1Cr18Ni9Ti (304)

H: Pressure

1: 1.6 MPa (DN ≥ 125) 2: 2.5 MPa (DN65–100) 3: 4.0 MPa (DN15–50)

I: Explosion-proof Performance

-N: None -Bi: Intrinsic safety explosion-proof type -Bd: Explosion-proof type

LUGB Vortex Flow Meter

Saturated steam flow range

Diameter Pressure	25 mm		32 mm		40 mm		50 mm		65 mm		80 mm		100 mm		125 mm		150 mm		200 mm		Temperature °C	Density kg/m ³
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
0.1	20	101	22.5	150	36	299	59	358	93	600	129	917	220	1.43	348	2.25	479	3.22	840	5.73	120.1	1.126
0.2	21	136	29.5	210	47	333	77	520	124	880	168	1.33	288	2.08	463	3.30	628	4.68	1.10	8.34	133.3	1.638
0.3	24	151	36	280	56	436	92	680	152	1.15	201	1.74	345	2.78	567	4.30	750	6.13	1.32	11.0	143.2	2.140
0.4	27	186	42	340	65	536	105	836	171	1.40	231	2.14	396	3.39	640	5.24	862	7.54	1.51	13.6	151.4	2.635
0.5	30	248	46	410	72	636	118	994	188	1.69	259	2.55	444	3.98	691	6.23	966	8.95	1.70	15.9	158.3	3.127
0.6	34	256	50	470	80	733	130	1.1	206	1.95	285	2.94	489	4.66	766	7.20	1.07	10.3	1.87	18.6	164.4	3.615
0.7	37	325	54	530	87	833	142	1.3	225	2.20	310	3.34	531	5.22	832	8.15	1.16	11.7	2.03	20.9	169.8	4.099
0.8	39	325	58	600	93	931	152	1.4	243	2.47	334	3.73	572	5.91	888	9.10	1.25	13.1	2.19	23.6	174.7	4.581
0.9	42	394	62	650	100	1.03	163	1.6	253	2.73	357	4.12	612	6.44	936	10.0	1.34	14.5	2.34	25.8	179.2	5.064
1.0	45	441	66	720	106	1.13	173	1.7	272	3.00	379	4.51	650	7.16	1.00	11.0	1.42	15.8	2.49	28.6	183.3	5.553
1.1	47	479	70	780	112	1.23	183	1.9	289	3.26	401	4.91	687	7.67	1.07	12.0	1.50	17.3	2.63	30.7	187.2	6.033
1.2	50	463	73	850	118	1.32	193	2.0	306	3.50	422	5.29	723	8.4	1.12	13.0	1.58	18.5	2.76	33.6	190.8	6.509
1.3	52	555	77	910	123	1.42	202	2.2	314	3.77	422	5.68	757	8.88	1.17	13.9	1.65	20.0	2.89	35.5	194.2	6.980
1.4	54	593	79	970	129	1.51	211	2.3	328	4.00	461	6.07	792	9.49	1.22	14.8	1.73	21.3	3.02	37.6	197.5	7.456
1.5	57	630	82	1.00	135	1.60	219	2.5	341	4.30	481	6.47	825	10.3	1.26	15.8	1.80	22.6	3.15	41.4	200.5	7.934
1.6	59	669	86	1.1	140	1.71	229	2.6	353	4.55	501	6.86	858	10.7	1.31	16.8	1.87	24.1	3.28	42.9	203.5	8.419
1.7	61	707	89	1.15	146	1.81	237	2.8	365	4.80	519	7.24	890	11.3	1.36	17.7	1.94	25.9	3.40	45.3	206.2	8.897
1.8	63	746	93	1.22	151	1.91	246	2.9	385	5.07	538	7.64	922	11.9	1.41	18.7	2.01	26.9	3.53	47.8	208.9	9.388
1.9	66	784	96	1.28	155	2.01	254	3.1	395	5.33	556	8.03	954	12.6	1.46	19.6	2.08	28.3	3.65	50.0	211.5	9.868
2.0	68	822	98	1.35	161	2.10	262	3.2	404	5.60	574	8.43	985	13.2	1.50	20.6	2.15	29.6	3.76	53.5	213.9	10.35
3.0	87	1.21	128	1.98	207	3.10	338	4.8	532	8.21	743	12.4	1.27	19.3	1.95	30.3	2.78	43.5	4.86	77.4	234.6	15.21
4.0	106	1.61	158	2.60	251	4.11	409	6.4	647	11.0	898	16.5	1.53	25.7	2.40	40.2	2.35	57.8	5.87	102.8	250.7	20.21
4.3	111	1.73	161	2.80	264	4.43	429	6.9	666	11.6	942	17.7	1.61	27.7	2.47	43.0	3.52	62.2	6.17	110.6	254.9	21.74

Note:

1. The data in bold within the thick frame of the table is in t/h, while the other data is in kg/h, and the pressure unit is MPa.
2. For diameters greater than 200 mm, the measurement of the steam flow range can be obtained by referring to the corresponding gas flow for the respective diameter multiplied by the steam density at the corresponding pressure and temperature.

LUGB Vortex Flow Meter

Superheated Steam Density Table

Pressure (MPa)	150	170	190	210	230	250	270	290	310	330	350	370
0.10	0.5164	0.4925	0.4707	0.4507	0.4323	0.4156	0.4001	0.3857	0.3724	0.3600	0.3484	0.3375
0.15	0.7781	0.7412	0.7079	0.6777	0.6500	0.6246	0.6010	0.5795	0.5594	0.5404	0.5230	0.5066
0.20	1.0423	0.9918	0.9466	0.9056	0.8684	0.8342	0.8027	0.7736	0.7465	0.7214	0.6980	0.6759
0.25	1.3089	1.2444	1.1869	1.1349	1.0849	1.0445	1.0048	0.9682	0.9343	0.9027	0.8732	0.8456
0.30	1.5783	1.4990	1.4287	1.3653	1.3079	1.2540	1.2077	1.1634	1.1224	1.0844	1.0488	1.0156
0.40	2.1237	2.0141	1.9166	1.8297	1.7513	1.6780	1.6152	1.5554	1.5000	1.4490	1.4010	1.3563
0.50	2.6658	2.5380	2.4121	2.2997	2.1992	2.1081	2.0255	1.9495	1.8802	1.8147	1.7545	1.6983
0.80	4.3966	4.1676	3.9350	3.7400	3.5374	3.4110	3.2718	3.1453	3.0283	2.9215	2.8227	2.7305
1.10	6.1313	5.8332	5.5342	5.2356	4.9810	4.7460	4.5445	4.3612	4.1943	4.0410	3.9030	3.7700
1.40	7.8785	7.5163	7.1540	6.7913	6.4288	6.1147	5.8437	5.5945	5.3794	5.1777	4.9945	4.8290
1.70	9.8464	9.3688	8.9247	8.4130	7.9352	7.5219	7.1830	6.8607	6.5815	6.3309	6.0998	5.7779
2.00	11.6295	11.0985	10.5676	10.0366	9.5054	8.9744	8.5350	8.1447	7.8061	7.4955	7.2186	6.9619
2.50	15.1890	14.4516	13.7150	12.9776	12.2406	11.5036	10.8794	10.3500	9.8888	9.4806	9.1139	8.7802
3.00	18.4168	17.5709	16.7243	15.8776	15.0367	14.1842	13.3377	12.6359	11.9979	11.5143	11.0494	10.6308
3.50	22.7008	21.5713	20.4427	19.3131	18.2266	17.0530	15.9243	15.0163	14.2565	13.8501	13.0286	12.6162
4.00	27.1640	25.7470	24.3303	22.9129	21.4954	20.0778	18.6603	17.4997	16.5527	15.7490	15.0539	14.4392
4.50	30.3852	28.9163	27.4475	25.9784	24.5096	23.0407	21.5717	20.1028	18.9333	17.9308	17.1279	16.4018
5.00	35.4243	33.6293	31.8342	30.0384	28.2433	26.4483	24.6532	22.8580	21.4221	20.2508	19.2627	18.4108
6.00	43.8954	41.7475	39.5988	37.4508	35.3020	33.1541	31.0062	28.8574	26.7091	25.0502	23.7006	22.5570
7.00	56.7201	53.6991	50.6780	47.6561	44.6352	41.6133	38.5922	35.5704	32.5488	30.2231	28.4037	27.0100
8.00	65.4713	62.1800	58.8883	55.5968	52.3061	49.0145	45.7231	42.4316	39.1399	35.8485	33.4179	31.4825
9.00	84.5457	79.8261	75.1061	70.3863	65.6665	60.9465	56.2100	51.5077	46.7877	42.0680	38.8083	36.3217
10.0	108.6250	102.0289	95.4346	88.8412	82.2486	75.6543	69.0600	62.4676	56.6648	49.2802	44.7560	41.5274
12.5	158.3464	148.7516	139.1578	129.5629	119.9781	110.3842	99.7769	91.1964	81.6034	72.0105	62.4178	56.1496
15.0	206.4175	194.4276	182.4477	170.4577	158.4766	146.4967	127.6820	122.5268	110.5369	98.5531	86.5688	74.5840
17.5	250.3934	236.6910	222.8603	209.1592	195.4568	181.6261	163.4280	154.2312	140.3919	126.6895	116.3142	100.8176
20.0	327.8165	309.9521	291.2953	273.4409	255.5786	236.9271	219.0574	201.2031	182.5462	164.6839	151.1200	137.7965
21.5	384.6647	363.2975	341.9027	320.5455	299.1880	277.7931	256.4260	235.0688	213.6739	192.3164	171.8651	150.0074

LR Thermal Gas Mass Flow Meter

Overview

The LR Thermal Gas Mass Flow Meter is a new type of instrument used for measuring and controlling gas mass flow. It is designed based on the principles of thermal diffusion (thermal conduction) and employs a constant temperature difference method for accurate measurement of gases. This instrument can be applied in various industrial sectors such as petroleum, chemical industry, steel, metallurgy, electric power, light industry, pharmaceuticals, and environmental protection for monitoring the flow of gases including air, oxygen, nitrogen, argon, helium, hydrocarbons, natural gas, and coal gas.

Product Execution Standard: GB/T20727-2006 (Industry Standard)
Flange Standard: GB/T9119-2000 (National Standard)



Measurement Principle

The sensor part of the thermal gas mass flow meter consists of two reference-grade platinum resistance temperature sensors. During operation, one sensor continuously measures the medium temperature T1; the other sensor is self-heated to a temperature higher than the medium temperature T2, which is used to sense the fluid flow velocity, referred to as the velocity sensor. The temperature difference $\Delta T = T2 - T1$, where $T2 > T1$. When fluid flows past the sensor, the gas molecules collide with the sensor and carry away the heat from T2, causing its temperature to drop. To keep a constant ΔT , the power supply current to T2 must be increased. The faster the gas flow velocity, the more heat is carried away. There is a fixed functional relationship between gas flow velocity and the additional heat required, which is the basis of the constant temperature difference principle.

$$(1) V = \frac{K(Q/\Delta T)^{1.87}}{\rho_g}$$

The applicable medium temperature range for the thermal gas mass flow meter is -10 °C to +200 °C

The formula for converting fluid specific gravity and density into mass is:

$$(2) Q_m = S \times V \times \rho_g = SK(Q/\Delta T)^{1.8}$$

- ρ_g : fluid specific gravity (related to density),
- Q: heating quantity (related to specific heat and structure),
- V: medium flow velocity,
- Q_m : gas mass flow,
- K: balance coefficient,
- ΔT : temperature difference,
- S: cross-sectional area of the measuring pipe

Since the sensor temperature is always automatically maintained at a certain temperature (around 30 °C to 50 °C) higher than the medium (environment) temperature, the thermal gas flow meter does not require temperature compensation from a theoretical standpoint.

$$(3) \rho_g = \rho_n \times \frac{P + 101.325}{101.325} \times \frac{273.15 + 20}{273.15 + T}$$

- ρ_g : Density of the medium under working conditions (kg/m³)
- ρ_n : Density of the medium under standard conditions (101.325 Kpa, 20 °C) (kg/m³)
- P: Working pressure (kPa)
- T: Working temperature (°C)

From equations (1), (2), and (3), it can be seen that the functional relationship among flow velocity, working pressure, gas density, and working temperature has been established. The constant temperature differential thermal gas mass flow meter is not only unaffected by temperature but also by pressure; the thermal gas mass flow meter is a direct mass flow meter, and users do not need to calibrate the pressure and temperature.

The flow range of the insertion-type thermal mass flow meter

The insertion-type thermal mass flow meter can estimate the corresponding flow velocity range of 0.56–56 Nm/S, with the calculation formula as follows:

$$Q = \bar{V} \times \pi \times D^2 \times 900$$

- Q: Instantaneous flow rate in the pipeline (Nm³/h)
- \bar{V} : Average flow velocity in the pipeline (Nm/s)
- S: Cross-sectional area of the measuring pipe (m²)

LR Thermal Gas Mass Flow Meter

Features

- Gas flow measurement does not require temperature and pressure compensation, making it convenient and accurate while providing gas mass flow or standard volumetric flow.
- It has a wide range ratio exceeding 100:1, suitable for gas leak detection, particularly in applications involving large-diameter pipes, low flow rates, wide flow range variations, and ultra-low flow measurements.
- Excellent anti-vibration performance ensures measurement accuracy is unaffected by vibrations.
- Long service life with no moving parts or pressure-sensitive components in the sensor, making it easy to install and maintain.
- Fast response speed, low pressure loss, good repeatability.
- Digital design with fully digitized circuit measurement and an intuitive, clear LCD display for accurate readings.
- Equipped with an RS485 communication module or HART protocol, enabling centralized management through integration with a hose system.

Main Technical Parameters

Connection Method	Flange type: DN25–150 mm Threaded type: DN25–50 mm Insertion type: DN125–2000 mm
Measuring Medium	(1) Single component or compositionally stable mixed dry gases (excluding acetylene and hydrogen)
Medium Temperature	(1) -10 °C to +100 °C, (2) -10 °C to +200 °C
Ambient Temperature	(1) -20 °C to +45 °C
Pipeline Diameter	(1) DN25–2000 mm
Output Signal	(1) 4-20mA (optical isolation, maximum load 500Ω), pulse, RS485 (optical isolation), HART Protocol
Alarm Output	(1) 1-2 channel relay normally open contacts, (10A/220V/AC, 5A/30V/DC)
Power Supply	(1) DC 24V, (2) AC 220V, (3) Power consumption ≤ 18W
Body Material	(1) 304 Stainless Steel, (2) 316 Stainless Steel
Pressure Rating	(1) P2=1.6 MPa (standard) DN125–2000 mm insertion type (2) P2=1.6 MPa (standard) DN25–150 mm flange type, DN25–50 mm threaded type (3) P3=2.5 MPa (Special-made) DN25–100 mm flange type (3) P4=4.0 MPa (Special-made) DN25–100 mm flange type
Indicator Reading	Standard volume instantaneous flow rate, total flow, standard flow velocity, current output value, etc.
Protection Level	IP65
Measurement Accuracy	±(1.5+0.5FS)%
Medium Flow Velocity	Conventional: 0.56–56 Nm/s, maximum flow velocity can be expanded to 100 Nm/s (range expansion can be negotiated for orders)
Remarks	Straight pipe section requirements: front ≥ 20 DN, rear ≥ 10 DN, for 90 °C elbows or expansion pipes, please refer to the manual requirements

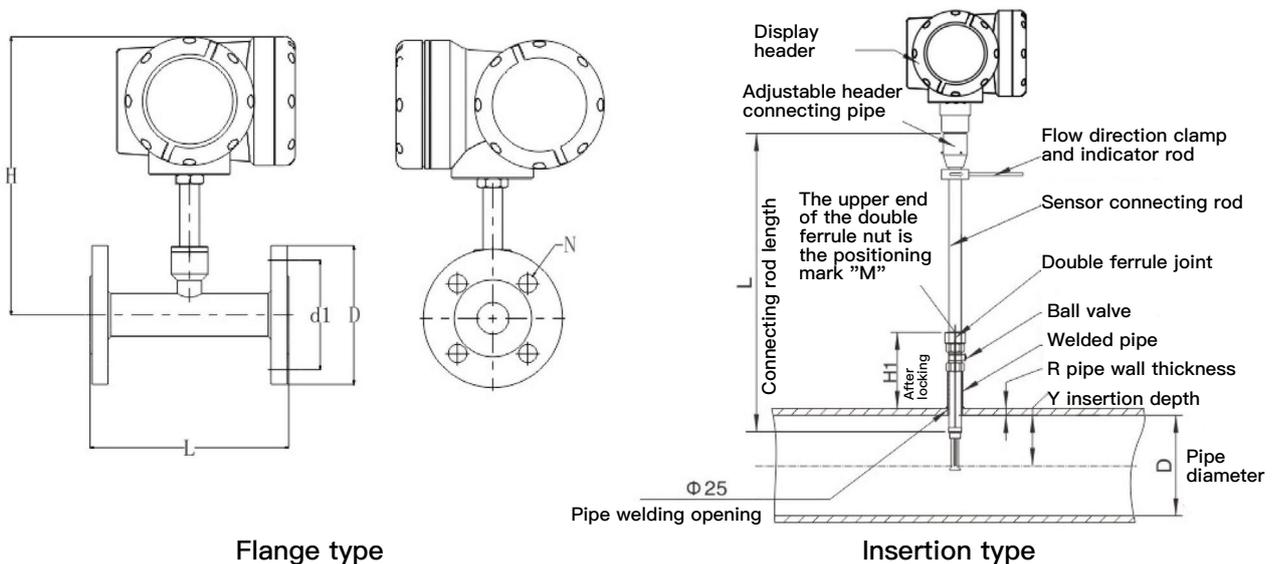
LR Thermal Gas Mass Flow Meter

Flange Type Dimensions Table

Diameter DN	Pressure Rating MPa	Length L	Height H	Center Hole Diameter d1	Flange Outer Diameter D	Screw Hole N	Thread Specifications
25	1.6	200	274	85	115	4×φ14	M12
32	1.6	200	278	100	140	4×φ18	M16
40	1.6	200	281	110	150	4×φ18	M16
50	1.6	200	286	125	165	4×φ18	M16
65	1.6	220	294	145	185	4×φ18	M16
80	1.6	220	302	160	200	8×φ18	M16
100	1.6	220	314	180	220	8×φ18	M16
125	1.6	220	326	210	250	8×φ18	M16
150	1.6	220	341	240	285	8×φ22	M20

Insertion Type Dimensions Table

Connection Type	Diameter DN	Pressure Resistance MPa	Connecting Rod Length L	Flow Measurement Method		Double Ferrule + Ball Valve + Welded Pipe Total Height After Locking Approximately H1	After Double Ferrule Locking Scale Line Position M	Gross Weight of the Body Kg
				Measurement Point	Insertion Depth			
Insertion type (Normal temperature)	125≤DN≤300	1.6	370	Measure the central flow velocity point	Y=0.5D	H1=142	M=Y+R+H1	3.00
	300<DN≤650	1.6	370	Measure the average flow velocity point	Y=0.121D	H1=142	M=Y+R+H1	3.00
	650<DN≤1200	1.6	420	Measure the average flow velocity point	Y=0.121D	H1=142	M=Y+R+H1	3.05
	1200<DN≤2000	1.6	510	Measure the average flow velocity point	Y=0.121D	H1=142	M=Y+R+H1	3.15
Insertion type (Medium to high temperature)	125≤DN≤300	1.6	570	Measure the central flow velocity point	Y=0.5D	H1=142	M=Y+R+H1	3.20
	300<DN≤2000	1.6	570	Measure the average flow velocity point	Y=0.121D	H1=142	M=Y+R+H1	3.20



LR Thermal Gas Mass Flow Meter Flow Selection Table

Flange Type DN25–150 mm Flow Selection Table

Diameter (mm)	25	32	40	50	65	80	100	125	150
Minimum Flow Rate (Nm ³ /h)	1	1.5	2.5	4	6.5	10	15	25	35
Maximum Flow Rate (Nm ³ /h)	100	150	250	400	650	1000	1500	2500	3500

Insertion Type DN125–2000 Flow Selection Table

Diameter (mm)	Minimum Flow Rate (Nm ³ /h)	Maximum Flow Rate (Nm ³ /h)	Diameter (mm)	Minimum Flow Rate (Nm ³ /h)	Maximum Flow Rate (Nm ³ /h)
125	25	2500	800	1000	100000
150	35	3500	900	1300	130000
200	65	6500	1000	1600	160000
250	100	10000	1100	1950	195000
300	150	15000	1200	2280	228000
350	200	20000	1300	2680	268000
400	250	25000	1400	3100	310000
450	320	32000	1500	3560	356000
500	400	40000	1600	4050	405000
550	480	48000	1700	4560	456000
600	560	56000	1800	5150	515000
650	680	68000	1900	5750	575000
700	780	78000	2000	6350	635000

Note:

1: The flow (velocity) range in the above flow selection table is applicable to ideal gases such as air and oxygen. For other gases, variations may occur. Users who need to extend the range can negotiate with our company for orders; users measuring explosive gases like oxygen should pay attention to safety flow rates and cleanliness.

2: The standard conditions for the flow (velocity) in the above flow selection table are 20 °C and 101.325 kPa.

LR Thermal Gas Mass Flow Meter

Model Selection and Description

LR — **A** **B** — **C** / **D/S** **E** **F** / **G** / **H** / **I**

Thermal Gas Mass
Flow Meter

A: Connection Method

F: Flange type conventional DN25–150 mm L: Threaded only suitable for DN25–50 mm
C: Insertion type only suitable for DN125–2000 mm

B: Measured Medium

3: Normal temperature gas -10 °C to +100 °C 3G: High temperature gas -10 °C to +200 °C

C: Pipeline Diameter

DN:25–2000 mm

D: Display and Output

S	4-20mA (four-wire) output
Standard Configuration	Upper and lower limit alarm
	RS-485, Modbus, RTU
	LCD displays instantaneous/total flow, flow velocity, output current, alarm, and other parameters

E: Display Connection Method

Y: Integrated F: Split type

F: Power Supply

DC: DC24V AC:AC220V

G: Body Material

R1: 304 Stainless steel R0: 316 Stainless steel (only applicable for flange type and threaded type)

H: Pressure Rating

P2: 1.6 MPa flange type DN25–100 mm (standard), Insertion type DN125–2000 mm, threaded type DN25–50mm (special-made)
P3: 2.5 MPa flange type DN25–100 mm (special-made)
P4: 4.0 MPa flange type DN25–100 mm (special-made)

I: Explosion-proof Rating

Bd: Explosion-proof Exd II C T6 Gb

LR Thermal Gas Mass Flow Meter

Appendix: Conversion Coefficient Table of Gas Relative to Air

Currently, the laboratory cannot calibrate the mass flow rate directly based on the actual gas used by the user. Instead, the actual gas flow rate is usually converted to the equivalent air flow rate for calibration. When in use, the user sees the direct output displaying the mass flow rate or volumetric flow rate of the actual gas being used.

The conversion between different gases is carried out using conversion factors, and the conversion factor for a single component gas can be found in the table below.

No.	Gas	Specific Heat (cal/g °C)	Density (g/L at 0 °C)	Conversion Factor
00	Air	0.24	1.293	1.0000
01	Ar	0.125	1.6605	1.4066
02	AsH ₃	0.1168	3.478	0.6690
03	BBr ₃	0.0647	11.18	0.3758
04	BCl ₃	0.1217	5.227	0.4274
05	BF ₃	0.1779	3.025	0.4384
06	B ₂ H ₆	0.502	1.235	0.5050
07	CCl ₄	0.1297	6.86	0.3052
08	CF ₄	0.1659	3.9636	0.4255
09	CH ₄	0.5318	0.715	0.7147
10	C ₂ H ₂	0.4049	1.162	0.5775
11	C ₂ H ₄	0.3658	1.251	0.5944
12	C ₂ H ₆	0.4241	1.342	0.4781
13	C ₃ H ₄	0.3633	1.787	0.4185
14	C ₃ H ₆	0.3659	1.877	0.3956
15	C ₃ H ₈	0.399	1.967	0.3459
16	C ₄ H ₆	0.3515	2.413	0.3201
17	C ₄ H ₈	0.3723	2.503	0.2923
18	C ₄ H ₁₀	0.413	2.593	0.2535
19	C ₅ H ₁₂	0.3916	3.219	0.2157
20	CH ₃ OH	0.3277	1.43	0.5805
21	C ₂ H ₆ O	0.3398	2.055	0.3897
22	C ₃ H ₃ Cl ₃	0.1654	5.95	0.2763
23	CO	0.2488	1.25	0.9940
24	CO ₂	0.2017	1.964	0.7326
25	C ₂ N ₂	0.2608	2.322	0.4493
26	Cl ₂	0.1145	3.163	0.8529
27	D ₂	1.7325	0.1798	0.9921
28	F ₂	0.197	1.695	0.9255
29	GeCl ₄	0.1072	9.565	0.2654
30	GeH ₄	0.1405	3.418	0.5656
31	H ₂	3.4224	0.0899	1.0040
32	HBr	0.0861	3.61	0.9940
33	HCl	0.1911	1.627	0.9940
34	HF	0.3482	0.893	0.9940
35	HI	0.0545	5.707	0.9930
36	H ₂ S	0.2278	1.52	0.8390
37	He	1.2418	0.1786	1.4066
38	Kr	0.0593	3.739	1.4066
39	N ₂	0.2486	1.25	0.9940
40	Ne	0.2464	0.9	1.4066
41	NH ₃	0.5005	0.76	0.7147
42	NO	0.2378	1.339	0.9702
43	NO ₂	0.1923	2.052	0.7366
44	N ₂ O	0.2098	1.964	0.7048
45	O ₂	0.2196	1.427	0.9861
46	PCl ₃	0.1247	6.127	0.3559
47	PH ₃	0.261	1.517	0.6869
48	PF ₅	0.1611	5.62	0.3002
49	POCl ₃	0.1324	6.845	0.3002
50	SiCl ₄	0.127	7.5847	0.2823
51	SiF ₄	0.1692	4.643	0.3817
52	SiH ₄	0.3189	1.433	0.5954
53	SiH ₂ Cl ₂	0.1472	4.506	0.4095
54	SiHCl ₃	0.1332	6.043	0.3380
55	SF ₆	0.1588	6.516	0.2624
56	SO ₂	0.1489	2.858	0.6829
57	TiCl ₄	0.1572	8.465	0.2048
58	WF ₆	0.0956	13.29	0.2137
59	Xe	0.0379	5.858	1.4066

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