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Пенза (8412)22-31-16

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Micro-bend Series



This mass flowmeter operates on the principle of coriolis force, A pair of flow tubes fixed at both ends is excited by...

Description

- Introduction
- Specification
- Outline Dimension
- Model Selection

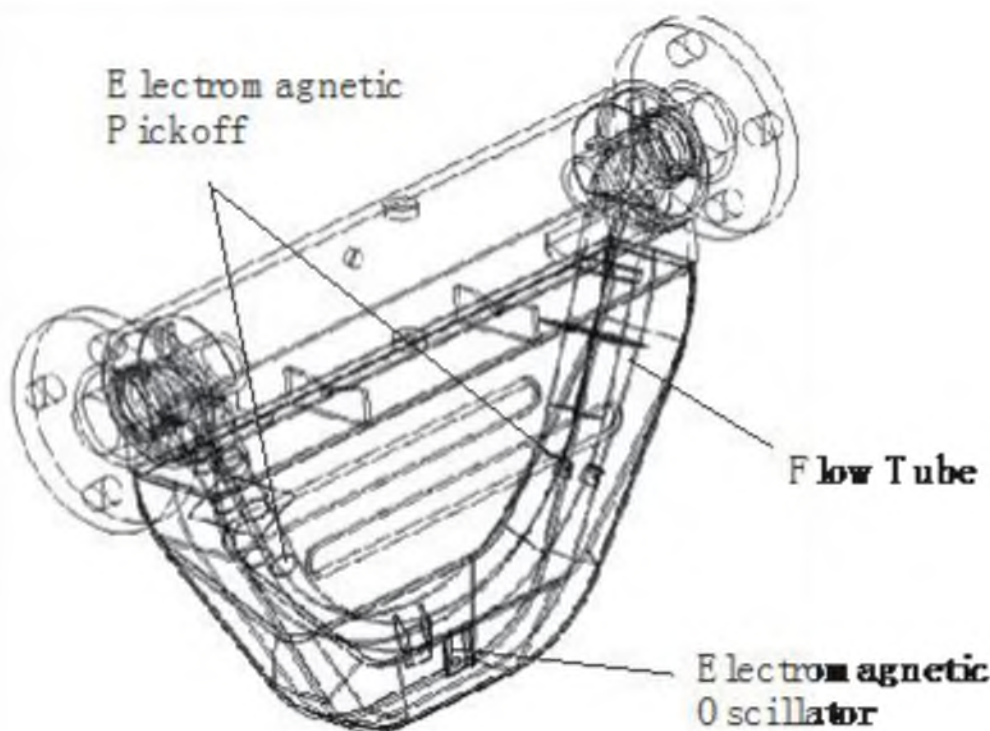
1.GENERAL

LZYN-Micro-bend series -Coriolis mass flow meters are a major advance in mass flow measurement. These meters have got a precedent for accuracy and repeatability under a wide variety of flow conditions. The inherent precision has established it as a standard for numerous industrial applications. The ability of these meters to measure mass flow and density directly has led to their use in applications ranging from metering food products to corrosive chemicals. Coriolis meters have proven extremely reliable when metering noncorrosive fluids. The same reliability can be achieved in corrosive services if consideration is given to the compatibility of the process fluid with the sensor materials of construction. Coriolis technology appealed to us, after all, coriolis is the most accurate technique available for measuring process mass and volume flows.



2.Principle and construction

This mass flowmeter operates on the principle of coriolis force. A pair of flow tubes fixed at both ends is excited by an electromagnetic oscillator to maintain oscillation at resonant frequency. A twist of these flow tubes takes place in proportion to the mass flowrate of the process material, which is sensed by the right-hand and left hand electromagnetic pickoff. The transmitter then sends their outputs to the receiving instrument as a mass flow signal.



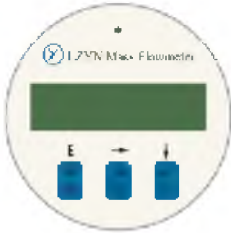
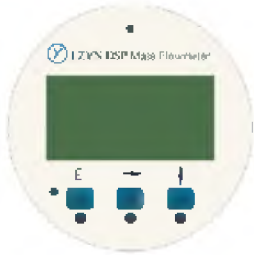
3.Features

- Compact design deduces piping space requirements
 - You can reconfigure transmitter parameters using a finger touch on the touch panel.
 - The sensor assembly is all welded stainless steel double-tube construction. Long service life is attributed to the absence of moving parts.
 - High Accuracy Mass and Density (typically 0.1%)
 - Low pressure drop
 - Heavy wall tubing with improved performance for slurries, high pressures, and high pressure gases
 - No straight upstream/downstream runs required
 - Large turn-down (typically exceeds 40:1)
 - Drainable sensor design
 - Higher operating frequencies assure plant/process isolation and Fit and Forget mounting
 - Excellent performance for solutions having entrained air or other multi-phase mixtures
 - Integral or remote transmitters
 - typical water-based gravimetric calibration system on water not affected by changes in viscosity, density, line pressure, temperature, or process fluid
- G Type Coriolis Transmitter & D Type Coriolis Transmitter
- G type coriolis transmitter is an analog transmitter, which adopts traditional method to do the

sampling and signal analysing.

D type coriolis transmitterutilizes DSP technologywhich greatly improves themethods of sampling, signal filtering, and signal analyzingforbetter performanceon accuracy and turndown.It especially enhances the accluracyunder low flow rate. It can be used for gas medium.

Difference between G TypeAnalog transmitter and D Type DSP transmitter

Com parison	G TypeA nalog tansm itter	D TypeDSP transm itter
Principle	1.T raditionalsam pling, process and reaction; Low turndown.	1.H ighersam pling; 2.Sho rterresponse time and quicker reaction; 3.D igitalfiltering. 4.H igheraccuracy and bigger turndow n ratio
D isph y	LCD	0 LED
Screen	Sma ll	B ig and leave space forfutureupdating
D isp lay Panel		
M odelC ode	G	D
In conclusion, DSP transm itter is much advanced than A nalog transm itter from principle, design and application,H owever, to keep the consistency on operation, w e did notchange m enus until now .		

Technical Specification

D N (m m)	15~50			
Structure	IntegralType (-50 ~+ 125)℃			
	SeparateType (-50 ~+200)℃ Non-explosion-proof (-50 ~+ 300)℃ 。			
Sensor	Micro-bentSeries			
Transmitter	DigitalType			
Explosion-proof	GeneralType Explosion-proof			
Power supply	24V D C	220V A C		
Output Interface	RS485			
Nominal Pressure (M pa)	1.6	2.5	4.0	6.4
Signal output	Pulse output		(4-20)m A	
Accuracy	0.1%	0.2%	0.5%	

D N (m m)	M ax.Flow Range (t/h)	N ormalFlow Range forAccuracy 0.1% (t/h)	N ormalFlow Range forAccuracy 0.2% & 0.5% (t/h)
D N 15	0.04~2.00	0.20~2.00	0.15~2.00
D N 25	0.12~6.00	0.60~6.00	0.40~6.00
D N 40	0.70~36.0	3.60~36.0	2.40~36.0
D N 50A	0.70~36.0	3.60~36.0	2.40~36.0
D N 50B	1.00~50.0	5.00~50.0	3.50~50.0

4.2. Accuracy

Table4

0.1%	0.2%	0.5%
$\pm 0.1\% \pm \left(\frac{\text{Stability of Zero Point}}{\text{Instantaneous Flow}} \times 100\% \right)$	$+0.2\% + \left(\frac{\text{Stability of Zero Point}}{\text{Instantaneous Flow}} \times 100\% \right)$	$+0.5\% + \left(\frac{\text{Stability of Zero Point}}{\text{Instantaneous Flow}} \times 100\% \right)$

Accuracy is calculated based on the w ater measurement under the condition of +20℃~25℃ and 0.1M Pa~0.2M Pa.

4.3. R e p e a t a b i l i t y

Table5

Accuracy	0.1%	0.2%	0.5%
Repeatability	±0.05%	±0.1%	±0.25%
Accuracy is calculated based on the water measurement under the condition of +20℃~25℃ and 0.1M Pa~0.2M Pa.			

4.4. M e a s u r e m e n t o f D e n s i t y

Table6

Density Range	(0.2~2.0) g/cm ³
Basic Error	±0.002g/cm ³ (Affected by the sensor)
Repeatability	0.001g/cm ³

4.5. M e a s u r e m e n t o f T e m p e r a t u r e

Table7

Temperature Range	(-50~+125) °C	Integral Type
	(-50~+200) °C	Separate Type
	(-50~+350) °C	High Temperature Separate Type
Basic Error	≤±1.0℃	

5. Specification of Function

Table8

Output Range	4~20mA
Resolving Power	0.000244mA
Basic Error	0.2% F.S
Temperature Impact	±0.005% F.S/℃
External resistor should be 250~600 Ω	

5.2 Frequency Output

Active Frequency Output can be configured to denote the mass flow or volume flow.

Table9

Output Range	0~10kHz
Resolving Power	0.152Hz
Basic Error	±0.075%
Temperature Impact	±0.001% F.S/℃
Max. capability of output range is 12kHz	

5.3 Low Flow Cutoff

When the flow value measured is lower than the value of Low Flow Cutoff, the LZYN will output zero flow and the totaliser will stop to accumulate. The value of Low Flow Cutoff is usually sets to be 1% of the maximum flow rate.

5.4 Ambient Limitation

5.4.1 Ambient vibration

Table 10

Frequency Range	(10~2000) Hz
Acceleration amplitude value	2g
Circulation time	50 times

5.4.2 Ambient temperature

Table 11

Working Temperature	(-20~+55) °C
Storage Temperature	(-20~+70) °C

5.4.3 Ambient humidity

Table 12

Working Humidity	<90%	+25°C No condensation
Storage Humidity	<95%	

5.4.4 Enclosure Grade: IP65

Outline Dimension (Shown in the following Drawings and Tables)

6.1 Micro-bend Shape Outline Dimension (Drawing 1 and Table 13)

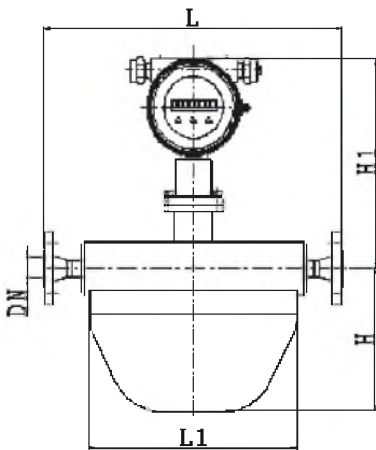


Table 13

Model LZYNM Micro-bent	DN (mm)	L (mm)	L1 (mm)	H (mm)	H1 (mm)
015	15	400	280	170	310
025	25	475	360	200	310
050	50	800	640	410	310

7. Model Selection

Table 15

Model		Explosion-proof Grade
Integrate Type	LZYN-015~50	Exdib IIC T4~T6 (IIC just includes H ₂)
Separate Type	LZYN-015~050	Ex ib IIC T3~T6 (IIC just includes H ₂)

LZYN — □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
 0 1 2 3 4 5 6 7 8 9 10 11

- Note:**
0—LZYN Series Mass Flowmeter
1—Nominal Size (mm)
2—Structure: 1—Integrate Type 2—Separate Type 3—High temp. separate type
3—Transmitter: D—Digital transmitter
4—Electric Enclosure A—General Type B—Explosion-proof Type (Table 15)

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