# LSZQ Gas Double Rotator Flow Meter

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Description


- Introduction
- Technical Datum
- Outline Dimension and Weight
- Model Selection


LSZQ Serials Gas Double Rotator Flowmeter is the newest positive displacement gas flowmeter, which is self-search and designed by Shanghai Yinuo Instrument Co., Ltd. As is well known that high accuracy and high security are vital to the transmission, measurement and transfer. LSZQ Serials Gas Double Rotator Flowmeter is the ideal measurement for them.
The meter is applied to measure the flow of the gases or gas mixtures in the sealed pipeline and operates in Constant Rotatory Flow Principle. Its permanent and non-adjusted accuracy is guaranteed by the spiral rotators which are made precisely by a pair of digital control process center and solid chamber, and can avoid the effect of the variation of the gases' specific gravity, pressure and flow. So the meter have typical application in oil field, chemical industry, metallurgy, sewage process, water treatment, thermoelectricity, and paper making, etc.

**Feature**

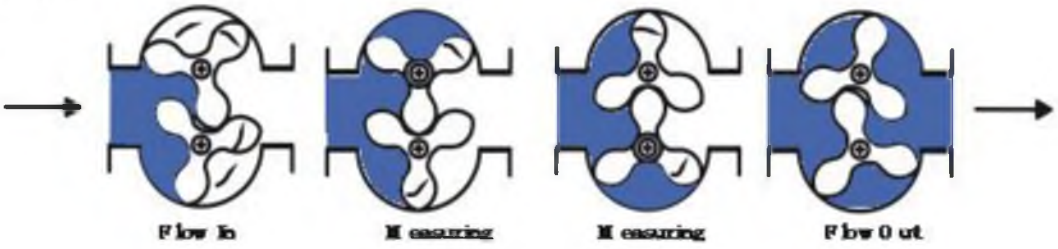
a. High accuracy, precise repeatability, smooth running, no pulsation and long service lifetime.
b. Little space for installation and no need to install straight pipe up and down the flow-meter.
c. The accuracy is stable and can avoid the effect of the variation of pressure and flow.
d. Automatic temperature and pressure compensation
e. Available with pulse and analog signals, and can be controlled and managed on-time through RS-485 Communication interface.
f. Low power consume, and available with interior battery or exterior power.
g. Available with specialized high precision Liquid Crystal Display and convenient fo-r reading.
h. Explosion-proof grade: Exd Ⅱ CT2～CT6.

**Principle**

As is shown in the picture 1, there are two spiral rotators with opposite rotating directions in the solid measurement chamber. The

rotators will run smoothly when the gap among them is kept optimal situation.
The measured gases will push the rotators to rotate, and the same volume gases will be discharged when the rotators run a round. The rotators are connected with the transducer which can generate a signal to intelligence electronic counter so that the instant and total flow can be displayed.

**Structure**




LSZQ Series Gas Double Rotator Flowmeter classified into two groups:
a. Intelligence Type
Micro-processor control system, with advanced integrated circuits, is highly interference rejection. It is also able to check error automatically. The gases' flow, temperature and pressure can be measured directly. The compensation and the modified operation of the compact gene can be traced automatically. Meanwhile, the instant flow, total flow and the medium temperature and pressure under normal conditions can be displayed as well.
b.General Type
The instant flow, total flow can be displayed without temperature and pressure compensation. There are not modified operation of the compact gene and the display of the liquid's temperature and pressure

**Working Condition**
Ambient temperature: -30℃～+55℃;
Relative humidity: 5%～95% ;
Liquid temperature: -20℃～+180℃;
Atmospheric pressure: 86KPa～106KPa.

Technical datum and performance index
Accuracy: ±0.2%

| Type | Nominal Diameter (mm) | Flow Range ($m^3/h$) | Min. Flow Rate ($m^3/h$) | Pressure Loss (KPa) | Normal Pressure (MPa) |
|---|---|---|---|---|---|
| LSZQ-20 | 20 | 5～20 | 0.2 | 0.1 | 1.6, 2.5, 4.0, 16 |
| LSZQ-25 | 25 | 7.5～30 | 0.25 | 0.15 | |
| LSZQ-40 | 40 | 10～40 | 0.45 | 0.15 | |
| LSZQ-50 | 50 | 12.5～50 | 0.9 | 0.20 | |
| LSZQ-80 | 80 | 37.5～150 | 1.0 | 0.27 | |
| LSZQ-100 | 100 | 100～400 | 1.5 | 0.30 | |
| LSZQ-150 | 150 | 250～1000 | 5 | 0.50 | |

Accuracy: ±0.5%

| Type | Nominal Diameter (mm) | Flow Range ($m^3/h$) | Min. Flow Rate ($m^3/h$) | Pressure Loss (KPa) | Normal Pressure (MPa) |
|---|---|---|---|---|---|
| LSZQ-20 | 20 | 3.3～20 | 0.2 | 0.1 | 1.6, 2.5, 4.0, 16 |
| LSZQ-25 | 25 | 5～30 | 0.25 | 0.15 | |
| LSZQ-40 | 40 | 6.6～40 | 0.45 | 0.15 | |
| LSZQ-50 | 50 | 8.3～50 | 0.9 | 0.20 | |
| LSZQ-80 | 80 | 25～150 | 1.0 | 0.27 | |
| LSZQ-100 | 100 | 67～400 | 1.5 | 0.30 | |
| LSZQ-150 | 150 | 166～1000 | 5 | 0.50 | |

**Accuracy: ±1%**

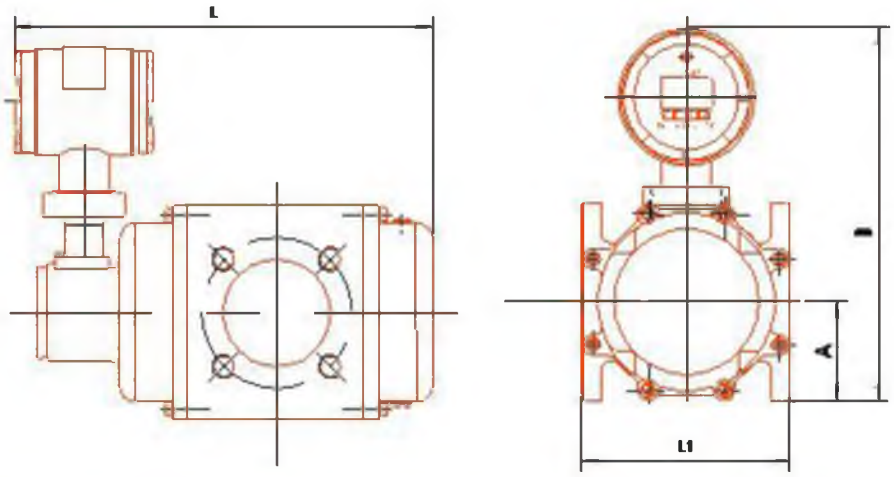
| Type | Nominal Diameter (mm) | Flow Range ($m^3/h$) | Min. Flow Rate ($m^3/h$) | Pressure Loss (KPa) | Normal Pressure (MPa) |
|---|---|---|---|---|---|
| LSZQ-20 | 20 | 2～20 | 0.2 | 0.1 | 1.6, 2.5, 4.0, 16 |
| LSZQ-25 | 25 | 3～30 | 0.25 | 0.15 | |
| LSZQ-40 | 40 | 4～40 | 0.45 | 0.15 | |
| LSZQ-50 | 50 | 5～50 | 0.9 | 0.20 | |
| LSZQ-80 | 80 | 15～150 | 1.0 | 0.27 | |
| LSZQ-100 | 100 | 40～400 | 1.5 | 0.30 | |
| LSZQ-150 | 150 | 100～1000 | 5 | 0.50 | |

Accuracy: ±1.5%

| Type | Nominal Diameter (mm) | Flow Range ($m^3/h$) | Min. Flow Rate ($m^3/h$) | Pressure Loss (KPa) | Normal Pressure (MPa) |
|---|---|---|---|---|---|
| LSZQ-20 | 20 | 2~24 | 0.2 | 0.1 | 1.6, 2.5, 4.0, 16 |
| LSZQ-25 | 25 | 3~36 | 0.25 | 0.15 | |
| LSZQ-40 | 40 | 4~48 | 0.45 | 0.15 | |
| LSZQ-50 | 50 | 5~60 | 0.9 | 0.20 | |
| LSZQ-80 | 80 | 15~180 | 1.0 | 0.27 | |
| LSZQ-100 | 100 | 40~480 | 1.5 | 0.30 | |
| LSZQ-150 | 150 | 100~1200 | 5 | 0.50 | |

**Electric performance index**

a. Frequency Signal: Frequency Range: 1Hz～400Hz
Scope: VL＜0.7V ; VH>12V
b. Signal Output : two-wire system 4～20mA ; three-wire system 4～20mA;
Current output can be corresponding with one of the pressure, temperature and flow.
c. Communication Interface: RS-485.




Picture2

| Type | Normal Diameter(mm) | L | L1 | A | B | Weight(kg) |
|---|---|---|---|---|---|---|
| LSZQ-20 | 20 | 217 | 180 | 53 | 270 | 10 |
| LSZQ-25 | 25 | 230 | 180 | 58 | 270 | 12 |
| LSZQ-40 | 40 | 260 | 280 | 75 | 323 | 25 |
| LSZQ-50 | 50 | 285 | 280 | 83 | 323 | 30 |
| LSZQ-80 | 80 | 413 | 210 | 103 | 310 | 45 |
| LSZQ-100 | 100 | 428 | 245 | 118 | 354 | 65 |
| LSZQ-150 | 150 | 758 | 600 | 310 | 500 | 273 |

| Type | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | Note |
|---|---|---|---|---|---|---|---|---|---|---|
| | | DN | Display Type | Electric Enclosure | PN | Medium Temp. | Output Signal | Accuracy | Compensate Type | |
| LSZQ | — | 020 | | | | | | | | DN:20mm |
| | | 025 | | | | | | | | DN:25mm |
| | | 040 | | | | | | | | DN:40mm |
| | | 050 | | | | | | | | DN:50mm |
| | | 080 | | | | | | | | DN:80mm |
| | | 100 | | | | | | | | DN:100mm |
| | | 150 | | | | | | | | DN:150mm |
| | | | D | | | | | | | Intelligence Electronic Counter |
| | | | | B | | | | | | Explosion-proof Grade:ExdIICT6 |
| | | | | | 16 | | | | | 1.6MPa |
| | | | | | 25 | | | | | 2.5MPa |
| | | | | | 40 | | | | | 4.0MPa |
| | | | | | 160 | | | | | 16MPa |
| | | | | | | 1 | | | | -20～+80℃ |
| | | | | | | 2 | | | | -20～+180℃ |
| | | | | | | | F | | | Pulse Output |
| | | | | | | | 1 | | | 4-20mA Current Output |
| | | | | | | | | 1 | | Accuracy:0.2% |
| | | | | | | | | 2 | | Accuracy:0.5% |
| | | | | | | | | 3 | | Accuracy:1.0% |
| | | | | | | | | 4 | | Accuracy:1.5% |
| | | | | | | | | | 1 | No Compensation |
| | | | | | | | | | 2 | Pressure Compensation |
| | | | | | | | | | 3 | Temperature Compensation |
| | | | | | | | | | 4 | Pressure and Temperature Compensation |

**Ordering Information**

Flowmeter Model : _____ ;
1.Nominal Diameter : _____mm ;
2.Medium Pressure : Max.:_____ Normal_____ Min._____MPa ;
3.Medium Temperature : _____℃;
4.counter Type : _____ ;
5.Need Signal Output : _____ ;
6.Accuracy : □0.2% □0.5% □1.0% □1.5% ;
7.Medium Name : _____ ;
8.Flow Range : Max.:_____ Normal_____ Min._____m3/h ;
9.Flange Standard : _____.
10.Compensation Type : _____.