

Gas Rotary Piston Meter

Technical Specifications





1. Overview

The gas rotary (Roots) flowmeter is a high-precision, high-reliability, and wide-range instrument for gas monitoring and measurement.

The intelligent gas rotary flowmeter is an advanced flowmeter that integrates flow, temperature, and pressure sensors with intelligent electronics, developed on the basis of the traditional rotary flowmeter.

It is an ideal instrument for measuring non-corrosive gases such as natural gas, city gas, propane, nitrogen, and industrial inert gases.

2. Main Technical Features

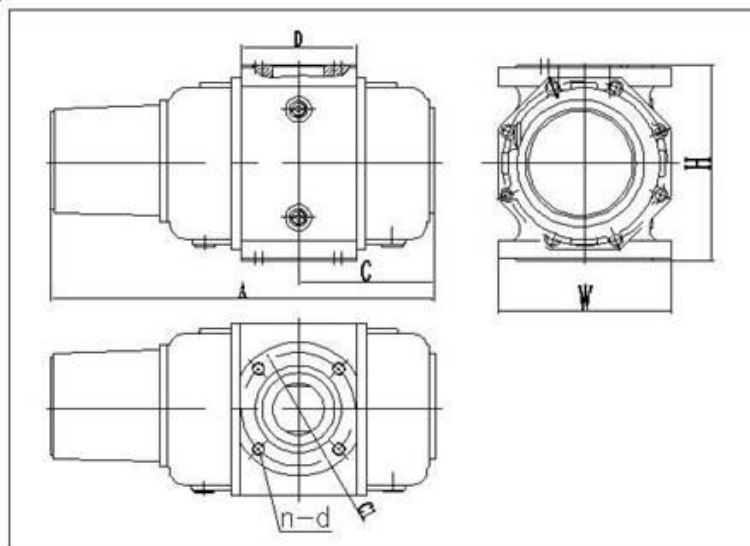
- a) **Wide measuring range:** Depending on the specification, the maximum turndown ratio can reach up to 1:216.
- b) **Low starting flow:** Depending on the specification, the minimum starting flow can be as low as 0.04 m³/h.
- c) **High accuracy and repeatability:** Long-term accuracy is not affected by the medium; stable precision is maintained during long-term operation.
- d) **Low pressure loss:** Depending on the specification, pressure loss ranges from 0.08 kPa to 0.58 kPa.
- e) **High integration and low power consumption:** Adopts advanced microcomputer technology and high-performance integrated chips, ensuring powerful functions and superior performance.
- f) **Compact structure:** The pressure sensor, temperature sensor, and flow sensor are all built-in, making the structure more compact.
- g) **Digital pressure and temperature sensors:** Equipped with digital temperature and pressure sensors, each individually calibrated and verified; easy to replace, maintain, and operate.
- h) **Segmented correction:** According to the flow frequency signal, the meter coefficient can be automatically corrected in six segments to improve measurement accuracy across a wide range.
- i) **Comprehensive data storage:** Uses E²PROM data storage chip to save user and factory parameters. The real-time data-saving function prevents data loss during sudden power failures. Internal parameters are permanently preserved even when powered off.
- j) **Complete output options:** Provides base meter pulse output, working condition or standard condition pulse output, and calibration pulse output. RS485 communication output is standard, and optional 4–20 mA analog signal output is available.
- k) **Data traceability management:** Real-time database function allows query and analysis through RS-485 communication interface.

- l) **GPRS real-time management system:** In this series, Model B is equipped with GPRS transmission capability, enabling online, timed, and scheduled data transmission, making it extremely easy to establish a GPRS wireless network system.

3. Model Types, Specifications, and Basic Parameters

Model No.	Nominal Diameter DN (mm)	Range Ratio	Flow Range (m³/h)	Start-up Flow (m³/h)	Pressure Loss at Qmax (Pa)	Max. Working Pressure (MPa)	Rated Pressure (MPa)	Material
LLQ-20D	25	20:1	1-20	0.07	0.10	1.6	1.6	Aluminum Alloy
LLQ-30D	40	30:1	1-30	0.07	0.10			
LLQ-40D	50	40:1	1-40	0.07	0.14			
LLQ-60D	65	65:1	1-65	0.07	0.17			
LLQ-85D	80	70:1	1.2-85	0.1	0.14			
LLQ-100D	100	70:1	1.5-100	0.1	0.11			
LLQ-150D	150	70:1	2-150	0.11	0.12			
LLQ-200D	200	80:1	2.5-200	0.11	0.13			
LLQ-300D	250	120:1	2.5-300	0.11	0.13			
LLQ-450D	100	120:1	4-450	0.1	0.20			
LLQ-500D	125	110:1	4-500	0.1	0.20	0.6		
LLQ-650D	150	130:1	8-650	0.15	0.35			
LLQ-800D	150	125:1	10-800	0.25	0.35			
LLQ-1000D	150	120:1	12-1000	0.25	0.35			
LLQ-1200D	200	110:1	12-1200	0.25	0.35			
LLQ-1600D	200	64:1	25-1600	1.2	0.50			

4. Overall Dimensions and Installation Size





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Model No.	Nominal Diameter DN (mm)	A (mm)	C (mm)	W (mm)	H (mm)	Flange
						C1
LLQ-20	25	235	90	105	105	φ115
LLQ-30	40	285	110	105	105	φ125
LLQ-40	40	307	120	105	105	φ125
LLQ-60	50	385	140	185	172	φ125
LLQ-80	50	420	156	185	172	φ125
LLQ-100	50	460	175	185	172	φ125
LLQ-150	80	490	190	185	172	φ160
LLQ-200	100	495	185	235	246	φ180
LLQ-250	100	565	230	235	246	φ180
LLQ-300	100	565	230	235	246	φ180
LLQ-450	100	655	275	235	246	φ180
LLQ-500	100	655	275	235	246	φ180
LLQ-650	150	640	293	450	380	φ240
LLQ-800	150	705	293	450	380	φ240
LLQ-1000	150	705	352	450	550	φ240
LLQ-1600	200	765	401	450	550	φ295

5. Gas Roots Flowmeter Specifications, Basic Parameters, and Performance Indicators

Model No.	Nominal Diameter DN (mm)	Range Ratio	Flow Range (m³/h)	Start-up Flow (m³/h)	Pressure Loss at Qmax (Pa)	Max. Working Pressure (MPa)	Rated Pressure (MPa)	Material
LLQ-20D	25	20:1	1-20	0.07	0.10	<0.6	1.6	Aluminum Alloy
LLQ-30D	40	30:1	1-30	0.07	0.10			
LLQ-40D	50	40:1	1-40	0.07	0.14	<0.6 <1.2	1.6 2.5	
LLQ-60D	50	65:1	1-65	0.1	0.10	<2.0		
LLQ-85D	80	70:1	1.2-85	0.1	0.14			
LLQ-100D	100	70:1	1.5-100	0.1	0.11			
LLQ-150D	150	120:1	1.2-150	0.11	0.15			
LLQ-200D	200	70:1	3-200	0.11	0.18	<1.2	1.6	
LLQ-250D	100	80:1	3-250	0.11	0.18			
LLQ-300D	100	120:1	2.5-300	0.11	0.13			
LLQ-450D	100	110:1	4-450	0.1	0.20			
LLQ-500D	100	125:1	4-500	0.1	0.20			
LLQ-650D	150	80:1	8-650	0.65	0.35			
LLQ-800D	150	80:1	10-800	0.65	0.35			
LLQ-1000D	150	90:1	11-1000	0.76	0.45			
LLQ-1600D	200	64:1	25-1600	1.2	0.50			

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