Smart Ultrasonic Gas Meter Solutions

An Alternative Solution to Diaphragm, Turbine or Roots Gas Meter for Residential, Commercial and Industrial Applications

USM-G2.5/G4/G6/G10/G16/G25/G40/G65

- Innovative Ultrasonic gas flow sensor technology

- Built-in temperature and pressure(>G6) compensation

- High measurement sensitivity and accuracy with intelligent software algorithm for air, 100% CH4, H1 and different natural gases

- Long-term accuracy stability

- Low operation & maintenance cost

- Compact size, light weight, easy installation

- Compliant to OIML R137 and EN14236 class 1.5

- GPRS and NBIoT solution optional

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Cubic

Ultrasonic Gas Flow Meter and Module

With innovative ultrasonic flow sensor technology, Cubic smart ultrasonic gas flow meters and modules realize high stability and high accuracy measurement for residential, commercial and industrial applications, especially for low flow range (Qmin) measurement. With built-in temperature and pressure compensation, along with intelligent software algorithm, Cubic gas flow meter and module are accurate in air,100% CH4, H1 and different natural gases for full temperature range.

Thanks to full electronic design without moving parts, ultrasonic gas meter technology has no issue of mechanical wear which leads to degradation of accuracy and has the advantage of anti-contamination. Therefore, long-term stability and accuracy can be guaranteed for ultrasonic gas meter solutions and there is no need for periodical maintenance.
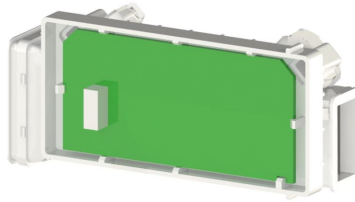
Besides, Cubic smart ultrasonic gas flow meters and modules are equipped with temperature sensor, pressure sensor and shut-off valve, which facilitates the accurate monitoring of gas flow, and the gas leakage check system realized by valve ensures user safety by automatically shutting down gas supply in case of inconspicuous leakage.

What's more, Cubic ultrasonic gas flow meters could also achieve low power consumption, which is a basis for smart gas metering market demand. To meet ever growing smart gas metering need, Cubic has developed gas flow meters combined with wireless communication GPRS and NBIoT, which enables users to read data of remaining gas volume and arrange top-up remotely.

Ultrasonic VS. Diaphragm Metering Technology

Features	USM Series Ultrasonic Gas Meter	Diaphragm Gas Meter
High Accuracy	√	√
No Mechanical Wear	√	×
No Magnetic Field Effect	√	×
No Periodical Maintenance	√	×
Anti-contamination	√	×
Small Size	√	×

Residential Ultrasonic Gas Flow Sensor Module

USM-G2.5M/G4M

Features

▶ Stable flow field distribution

▶ High sensitivity and accuracy with intelligent software algorithm for Air,100% Ch4 and different natural gases

▶ Low pressure loss due to absence of obstructing objects within flow path

▶ Low power consumption

▶ UART/TTL interface with direct output for connection

▶ Small footprint which permit compact designs

▶ Compliance to OIML R137 and EN14236 class 1.5

Model No.	USM-G2.5M		USM-G4M	
Measurement Range	$0.025 \sim 4m^3/h$	$0.88 \sim 141.26 \ ft^3/h$	$0.04 \sim 6m^3/h$	$1.41 \sim 211.88 \ ft^3/h$
Accuracy	Class 1.5			
Error	$Qmin \leq Q < 0.1Qmax : \pm 3\%$ $0.1Qmax \leq Q \leq Qmax : \pm 1.5\%$			
Power Consumption	MAX: 350mAh/year (40uA/h) (VCC=3.6V) (at: 25°C or 77°F)			
Power Supply	3-3.6VDC			
Temperature Measurement	YES			
Working Pressure	0~20kPa / 0~2.90psi			
Pressure loss	200pa / 0.029psi or less (at Qmax)			
Working Temperature	-25°C~55°C / -77°F~131°F			
Storage Temperature	-30°C~70°C / -86°F~158°F			
Working Humidity	≤95% RH without condensation			

＊Higher pressure gas meters can be customized, please consult info@gassensor.com.cn for more information.

Ultrasonic Gas Flow Meter

Full measurement range cover residential and commercial gas metering applications

Residential Ultrasonic
Gas meter USM-G2.5/G4

Commercial Ultrasonic
Gas meter USM-G6/G10/G16

Commercial Ultrasonic
Gas meter USM-G25/G40/G65

Model No.	USM-G2.5/G4		USM-G6/G10/G16		USM-G25/G40/G65	
Measurement Range	0.025~4 m³/h 0.04~6 m³/h	0.88~ 141.26 ft³/h 1.41~ 211.88 ft³/h	0.06~10 m³/h 0.1~16 m³/h 0.16~25 m³/h	2.12~353.14ft³/h 3.53~565.02 ft³/h 5.65~882.85 ft³/h	0.25~40 m³/h 0.4~65 m³/h 0.65~100 m³/h	8.83~1412.6 ft³/h 14.13~2295.41 ft³/h 22.95~3531.4 ft³/h
Accuracy	Class 1.5					
Error	$Q_{min} \leq Q < 0.1Q_{max}$:±3% $0.1Q_{max} \leq Q \leq Q_{max}$:±1.5%					
Battery	3.6V Lithium battery					
Connector Type	Screw thread, G1-1/4 or M30*2		Screw thread, G1-1/2		Screw thread, G2 or G2-1/2	
Dimensions	210*113.5*149mm		246*204*110.5mm		330*248*167mm	
Weight	1.1kg		2.3kg		4.0kg	
Center Distance of Connectors	110mm		150mm		180mm	
Working Pressure	0~20kPa / 0~2.90psi		0~50kPa / 0~7.25psi		Normal pressure: 0~50kPa / 0~7.25psi Higher pressure: 0~250kPa / 0~36.26psi	
Pressure loss	200pa / 0.029psi or less		250Pa / 0.036psi or less 375Pa / 0.054psi or less		375Pa / 0.054psi or less 300Pa / 0.043psi or less (without valve) 400Pa / 0.058psi or less (without valve)	
Working Temperature	-20°C~55°C / -68°F~131°F					
Storage Temperature	-30°C~70°C / -86°F~158°F					
Protection Class	Aluminum case: IP54 Steel case: IP65		IP65			

Applications

Residential Gas Meter	Commercial Gas Meter

Gas Fireplace
Gas Range Cooktop
Gas Dryer
Gas Water Heater

Smart Ultrasonic
Gas Meter

Natural Gas Main

Cubic