



Confidence, Creativity, and
Service

Ultrasonic Flowmeter for Fuel Gas

AS Series

Version 2

Measures gas consumption at high sensitivity
and high precision.

AS-40

AS-100

Wide rangeability of
1:400

Long built-in battery life

No moving parts for greater
maintainability

Easier-to-Use Ultrasonic Technology

Ultrasonic Flowmeter for Fuel Gas AS Series

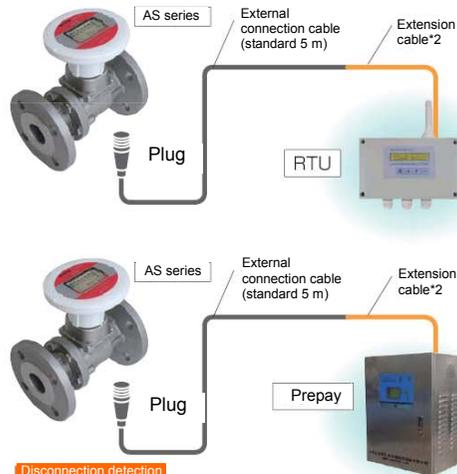
AS-100



- WIDE** **Wide rangeability of 1:400**
 Wide rangeability of 1:400 from the sensible flow rate (measurement starting flow rate) to the maximum flow rate is achieved. This wider rangeability allows for correct measurement with low flow rate.
- OUTPUT** **Remote measurement**
 RS485 output in addition to unit pulses allows for remote indication and energy management.
- LONGLIFE** **Long built-in battery life**
 This meter runs with a built-in lithium battery and no electric construction is necessary. It can continuously work over a long period of time (typically six years under normal measurement mode*).
- Normal conversion function**
 Built-in normal conversion function is provided to indicate the gas consumption flow rate, temperature, and pressure converted into the normal state, allowing for more detailed energy management.
- Zero pressure loss, zero energy loss**
 Ultrasonic is used for the measurement principle. There is no obstacle inside the measurement tube so the pressure loss is zero, resulting in higher durability.
- Easy-to-read indicator**
 A large-sized digital indicator is used to show the accumulated and momentary flow rates at the same time. The indicator can be rotated by 90 degrees on the spot.
- 2200 data logs** **Enhanced logging function** **NEW**
 Eleven data log items including timestamp, temperature, pressure, momentary flow rate, accumulated flow rate, etc. can be stored for up to 2200 sets. Data retrieval interval can be set to 5 minutes to 24 hours.
- Atmospheric pressure setting** **NEW**
 Gas measurement with the gauge pressure in addition to the absolute pressure is now available.

*1. Design specifications under normal use conditions.

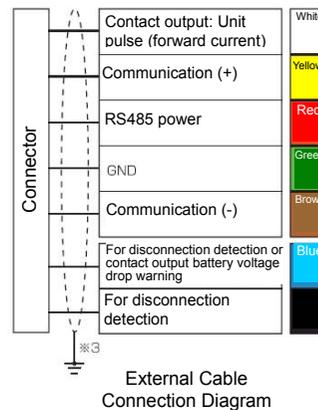
System configuration example



Disconnection detection function can be selected.

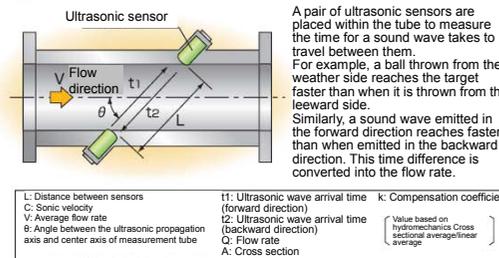
*2 Use a steel wire tube for noise prevention.

Connection between power supply and indicator

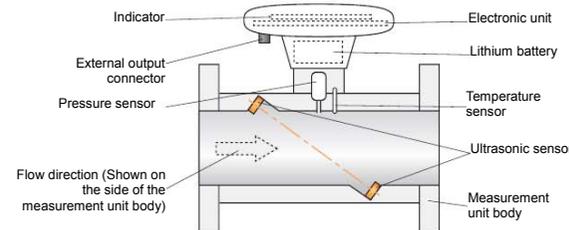


*3 The main body and GND are electrically common. Use an isolated power supply and indicator as required.

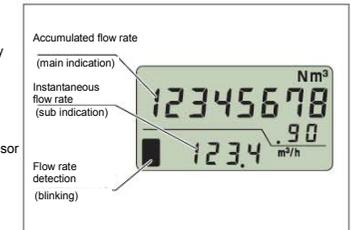
Measurement principle



Configuration diagram



Indicator



Product Specifications

Model	Temperature compensation model			Temperature and pressure compensation model				
	AD-25	AS-32	AS-40	AS-50	AS-80	AS-100	AS-150	AS-200
Caliber	25A	32A	40A	50A	80A	100A	150A	200A
Power supply	Built-in lithium battery							
Life *1	10 years							
Target gas	Natural gas, air							
Pressure (for each pressure sensor)	Without pressure compensation: AS-L-0 Absolute sensor atmospheric pressure to 0.2 MPa Specifications: AS-L-200A-B Absolute sensor atmospheric pressure to 0.5 MPa Specifications: AS-L-500A-B Gauge pressure sensor atmospheric pressure to 0.2 MPa Specifications: AS-L-200G-B Gauge pressure sensor atmospheric pressure to 0.5 MPa Specifications: AS-L-500G-B				Without pressure compensation: AS-□-0 Absolute sensor atmospheric pressure to 0.2 MPa Specifications: AS-□-200A-B Absolute sensor atmospheric pressure to 0.5 MPa Specifications: AS-□-500A-B Absolute sensor atmospheric pressure to 1.0 MPa Specifications: AS-□-1000A-B Gauge pressure sensor atmospheric pressure to 0.2 MPa Specifications: AS-□-200G-B Gauge pressure sensor atmospheric pressure to 0.5 MPa Specifications: AS-□-500G-B Gauge pressure sensor atmospheric pressure to 1.0 MPa Specifications: AS-□-1000G-B			
Flow rate range	-20m/s- +20m/s							
Flow rate measurement precision *2	+5%RS(m ³ /h)	+1.3-13	+1.6-16	+3-30	+6-60	+10-100	+24-240	+40-400
	+2%RS(m ³ /h)	+13-65	+16-80	+30-150	+60-300	+100-500	+240-1200	+400-2000
Low flow cut off (start flow rate)*3	Flow rate [m/s]	0.05 m/s or less						
	Actual flow rate [m/s]	0.1	0.2	0.2	0.4	0.8	1.5	3.2
Fluid temperature and humidity	-20 - +60°C, 90% or less							
Pressure loss	Almost zero (similar to straight tube part)							
Indicator	Accumulated flow rate	Accumulated flow rate: 00000000.0 (9 digits/m ³ or Nm ³)				Accumulated flow rate: 000000000 (10 digits/m ³ or Nm ³)		
	Instantaneous flow rate*4	(1) Maximum indication value: ±19999Nm ³ /h (converted flow rate)				(2) Maximum indication value: ±19999Nm ³ /h (actual flow rate)		
	Temperature*4	(Two decimal placed for a value less than 200, one decimal place for a value from 200 to less than 2000, integer only for a value of 2000 or more)						
Output	Pressure*4	00.0°C (3 digits)						
	Contact output	0000.0kPa (5 digits)						
	Message transmission	Open drain output: Unit pulse (forward current), pulse unit: 100,1000,10000 (L/P or NL/P)						
	Battery voltage drop warning output, disconnection detection function	RS485 MODBUS/RTU						
Connection method	R1	R1-1/4	GB/T9119-2000 PN1.6MPa flange					
Mounting orientation	Horizontal, vertical							
Mount location	Indoor, outdoor (protection level IP 64 or equivalent)							
Case material	Aluminum alloy				Stainless alloy			
Gas contact part material	Aluminum alloy, engineering plastic				Stainless alloy, engineering plastic			
Weight	1.8kg	1.7 kg	7.6 kg	9.6 kg	13.3 kg	13.2 kg	20.4 kg	35.4 kg

*1. Design specifications under normal use conditions.

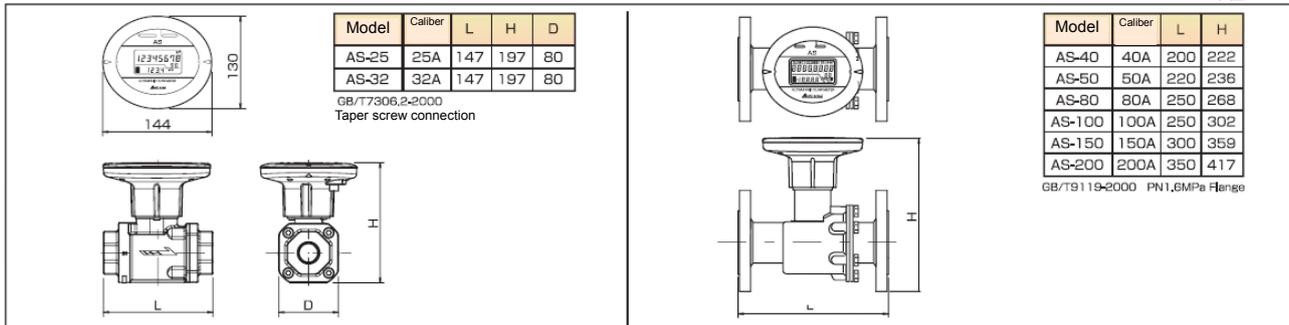
*2. The flow rate measurement range is ±5% RS: Inclusive and not inclusive and ±2% RS: Inclusive for both ends.

*3. When the flow rate is less than 0.25% of the maximum flow rate, the momentary flow rate is indicated as 0 m³/h. For the normal conversion type, the value is cut at the normal conversion flow rate in 0.05 m/s units.

*4. Automatically switched in every 4 seconds.

External dimensions

Unit: mm



Conversion table for actual flow rate and standard flow rate (for absolute pressure 0.54 MPa at 30°C)

	AS-40(40A)	AS-50(50A)	AS-80(80A)	AS-100(100A)	AS-150(150A)	AS-200(200A)
Actual flow rate (m ³ /h)	80	150	300	500	1200	2000
Standard flow rate (Nm ³ /h)	382	716	1432	2385	5726	9543

[Formula]

$$\text{Standard flow rate (Nm}^3\text{/h)} = \frac{\text{Absolute temperature at 20}^\circ\text{C (273.15K+20K)}}{\text{Absolute temperature of use temperature (273.15K+t)}} \times \frac{\text{Absolute pressure of use pressure (P)}}{\text{Absolute pressure at 1 atm (0.10133 MPa)}} \times \text{Actual flow rate (Nm}^3\text{/h)}$$

Specifications in this catalog are as of November 2014.

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This catalog uses soy ink and recycled paper.

Note The product specifications are subject to change without notice for improvement. If you have a catalog or material which is not up-to-date, contact us for the latest catalog or material or for the detailed information.

Revision No.
1.3

KG-AS-000