TOKICO

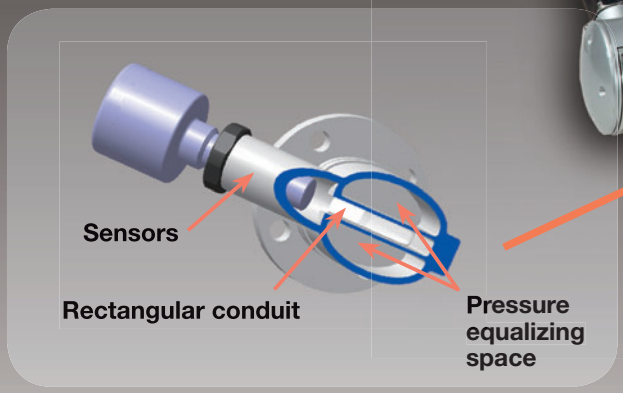
New Product

S² Sonic

Ultrasonic Gas Meter Supporting a Wide Flow Range with High Accuracy

Highly Accurate Flow Measurement

Adopts the propagation time difference system.
The time difference of the ultrasonic waves varies in proportion to the flow speed when the pair of sensors alternately and repeatedly emit and sense signals.



- Tokyo Gas Co., Ltd.
- Sonic Corporation
- Tokico Technology Ltd.

This product was jointly developed by the above 3 companies.

Adopts a Unique Rectangular Conduit and Pressure Equalizing Space for Eliminating Pressure Influence

■ High Accuracy/Wide Flow Range

High-accuracy (±1% RD (meter units))
Wide measuring range (flow rate range 1:40, flow rate sensitivity 1/200)
Maximum flow speed: 30 m/s, sufficient for measuring town gas

■ Space Savings Ensured by Rectangular Conduit

A rectangular shape that is effective for measuring the average flow speed in the conduit is used to achieve high-accuracy measurement. Also, a baffle plate or other mechanisms do not need to be installed, allowing the upstream straight pipe to be shortened to a length of 7D.
(A downstream straight pipe length of 2D is required.)

■ No Moving Parts/No Obstructions

No protrusions in the flowpath means little pressure loss and no supply failure in the event of an unexpected malfunction.

■ Dust-/Mist-Resistant

Meter operation is hardly affected by dust, mist or other foreign matter in gas piping.

■ Instant Response to Changing Flow Speed

This meter adopts a propagation time difference system where the propagation time difference of the ultrasonic waves varies in proportion to the flow speed.
Frequent repeated emission and sensing of signals enables an instant response to sudden changes in the flow speed.

■ Forward/Backward Flow Measurement

Even if operating conditions cause the gas to flow in reverse, forward/backward flow is judged to prevent the measured flow rate from being incremented.

■ Long-Life Metal Ultrasonic Sensor

The ultrasonic sensor is in a metal-covered sturdy structure to ensure long life.

■ Display Unit Integrated Structure

The measuring unit and display are in an integrated structure, simplifying wiring at meter installation.

■ Pressure-Resistant, Explosion-Proof Structure

The meter can be installed in factories, governor boxes, underground, and other sites where explosion protection is required.

■ Built-in Communications Function

The meter has a built-in communications function. As a result, meters can be remote-controlled from centers or automatically read once they are connected to the exclusive communications unit.
These features sometimes are not possible due to the exclusive nature of the communications function.

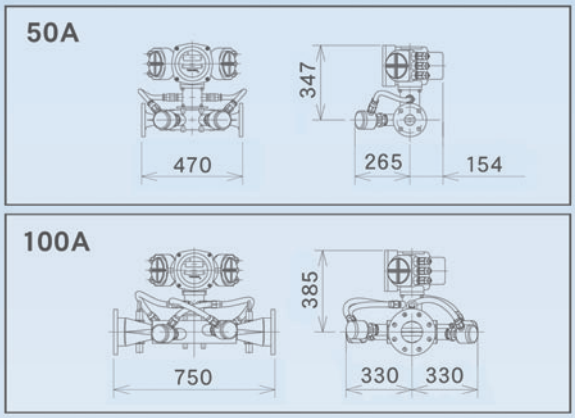
Hardware Specifications

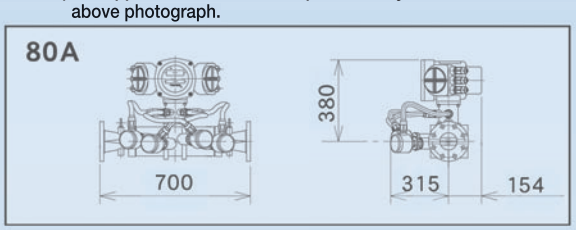
Aperture	50 A	80 A	100 A (Note 4)	150 A (Note 4)
Fluid	Town gas, natural gas, air, other non-corrosive gases (Note 1)			
Flow rate range	5 to 220 m^3/h	19 to 550 m^3/h	25 to 900 m^3/h	50 to 2100 m^3/h
Accuracy	Meter unit: ±1% RD, after temperature/pressure compensation: ±1.5% RD (Note 2)			
Minimum flow rate sensitivity (Note 3)	1.1 m^3/h	2.8 m^3/h	4.5 m^3/h	10.5 m^3/h
Max. operating pressure	0.99 MPa			
Fluid temperature	-10 ~ +50 °C			
Pressure loss	When measuring 13 A town gas pressure of 0.3 MPa (equivalent to intermediate pressure A): 12 kPA or less When measuring 13 A town gas pressure of 0.06 MPa (equivalent to intermediate pressure B): 5 kPA or less			
Display	8-digit LCD counter (display switchable between integrated value, instantaneous flow rate and other parameters)			
Output	Pulse output (open collector): 2 points, analog output (DC, 4 to 20 mA): 3 points			
Input	Analog input (DC, 4 to 20 mA): 2 points (for temperature and pressure input)			
Power supply	100 VAC, 50/60 Hz or 24 VDC (Note 4)			
Power consumption	10 W			
Material of gas contact parts	SCS13, SUS304		SS400, SCPH2, SUS304	
Pipe connections	JIS 10K FF or RF			
Required straight pipe length	Upstream: 7D or more, downstream: 2D or more			
Installation attitude	Horizontal or vertical			
Structure	Pressure-resistant, explosion-proof structure (Exd II BT4)			
Installation site	Outdoors, Zone hazardous area class 2			
Ambient temperature	-10 ~ +50 °C			
Approximate weight (Note 5)	Approx. 45 kg	Approx. 70 kg	Approx. 110 kg	Approx. 270 kg

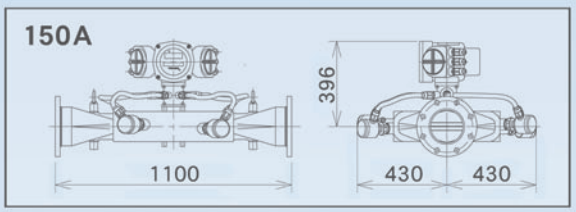
Note 1) Contact us regarding other fluids.
Note 2) This accuracy assumes use of pressure and temperature sensors designated by our company.
Note 3) This flow rate assumes zero cutoff performed at 1/200 (standard) of the maximum flow rate.
Note 4) 110 A, 150 A and 24 VDC specifications are scheduled to be added in the near future.
Note 5) This is the weight of the meter unit only. (The weight of the pressure and temperature sensors is not included.)

Note: 1) The appearance of the actual product may differ from the above photograph.

External Views







Note: 2) The details in this catalog are subject to change without notice.
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