GI Instruments Québec Inc.

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GI Instruments Québec Inc.

Product Catalogue

GI Instruments Québec Inc.

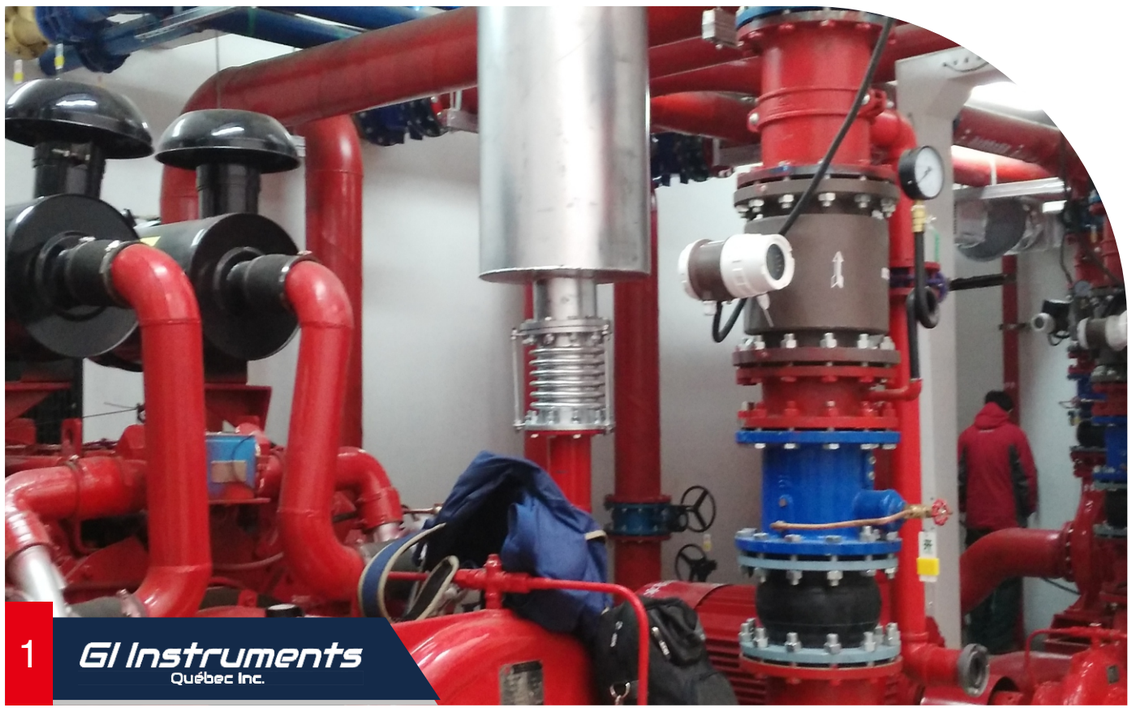
GI Instruments Québec Inc. manufactures and distributes flow meters worldwide. Our aim is that provides our clients measuring equipments with high quality and accuracy. A professional consultant team gives the solutions to customers for figuring out their measuring issues. We served on water, oil, chemicals, gas and other fluids measurement. Our mission is to be an expert of flow.

Professional Industrial

Products are known for accuracy, durability and providing valuable and timely measurement data.

Over 20 years experience

We served on water, oil, chemicals, gas and other fluids measurement.



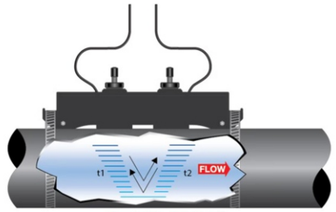
GIHU-226 & GIWU-226

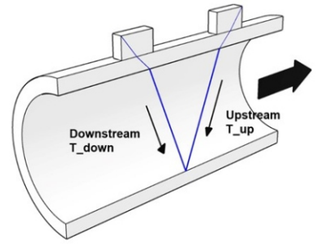
ULTRASONIC FLOW METER

Working Principle

This Ultrasonic Flow meter adopts the time-difference measurement principle. The ultrasonic waves emitted by the sensor in a fluid, the flowing in the propagation direction of acoustic wave propagation velocity downstream increases, decreases the upstream direction, have different propagation distance in the same transmission time, measure the flow rate according to the difference of the transmission time and the fluid flow velocity.

When the ultrasonic signal is transmitted through the flowing liquid, there will be a difference between the upstream and downstream transit time (travel time or time of flight), which is proportional to flow velocity, according to the formula below.





Flow Velocity V

$$V = K \cdot \frac{(T\_up - T\_down)}{(T\_up + T\_down)}$$

Feature

- The design is compact, lightweight, and easy to carry.
- Calculate positive and negative flow and cumulative measurement.
- Add SD card data automatic storage function, data will never be lost again.
- Rechargeable battery and universal power supply design.
- Advanced modular integrated design, independent menu operation, large-screen LCD backlight 4 lines display.
- Particularly suitable for on-site flow detection for various pressure requirements

Mounted Clamp-on Type

Mounted Insertion Type

Portable Clamp-on Type

Portable Insertion Type

Applications

- Water Treatment and Water Supply Industry
- Construction and HVAC Systems
- Chemical Industry
- Food and Beverage Industry
- Agriculture and Irrigation
- Oil and Gas Industry
- Urban Drainage Systems
- Rivers, Canals, and Reservoirs
- Environmental Monitoring

ULTRASONIC FLOW METER

Technical Data

NOTE: Default Tri-clamp length is 1.2m, suitable for pipe diameter <DN350.(wall-mounted)
Default Chain length is 2m, suitable for pipe diameter <DN450.(portable)

Model	GIWU-226	GIWU-226-S(Standard)	GIHU-226
Type	Wall-mounted	Wall-mounted	Portable
Accuracy	±0.5% of measured value @ 0.5m/s~12m/s	±1% of measured value	±1% of measured value
Repeatability Error	0.15%	0.2%	0.2%
Flow Range	±0.01m/s ~±12m/s	±0.03m/s ~ ±5m/s	±0.01 m/s~ ±12 m/s
Pipe Size	1/2"to 200" (15mm to 5000mm)	1/2"to 48" (15mm to 1200mm)	1/2"~48"(15mm~1200mm)
Pipe Material	Carbon steel,stainless steel, PVC, Cast iron	Carbon steel,stainless steel, PVC	Carbon steel,stainless steel, PVC, Cast iron
Output	4~20mA, max load 750Ω.		
	Relay, SPST, max 1Hz, (0.4A@125VAC or 2A@30VDC)		/
	OCT pulse, 0~9999Hz	OCT pulse, 0-10KHz	/
Communication	RS232 & RS485, HART 7.0		RS485 ONLY
SD Card	Default, 32G	Optional, 32G	Default, 32G
Power Supply	90 to 245 VAC & 10 to 36VDC	Default,10-36VDC@1A Optional, 90 to 245 VAC	Rechargeable Lithium Battery Power，3000mAh (Continuous operation of main battery 16 hours)
Display	9999999, 1~2 digits after the decimal point		
Temperature	-20°C~60°C		
Temperature (Sensor)	Default, -40°C~ 80°C; Max -40°C~ +180°C		Default, -40°C~ 80°C; Max -40°C~ +130°C
Protection (Transmitter)	IP65		IP54
Protection (Sensor)	IP68		
Cable Length	9m,up tp 274m		5m, up to 30m
Housing	Aluminum Alloy	PC/ABS	ABS+PC
Humidity	Up to 99% RH,non-condensing		

GIHU-226 & GIWU-226

ULTRASONIC FLOW METER

Model Selection

Model	Suffix Code					Description
GIWU-226	❶	❷	❸	❹	❺	Wall-mounted Type 0.5% accuracy; DN15-DN5000 pipe size; 10~36V DC & 90-245 VAC power supply; 32G SD Card
Output	1					OCT, Relay, RS232 & RS485, 4-20mA
	2					OCT, Relay, RS232 & RS485, 4-20mA, RTD
Sensor		C1				Clamp-on, -40°C~+80°C (DN25-DN5000)
		C1U				Clamp-on, -40°C~+130°C (DN25-DN5000)
		C1H				Clamp-on, -40°C~+180°C (DN25-DN5000)
		C2				Clamp-on, 0°C~+65°C (DN15~DN40 only)
		C2U				Clamp-on, 0°C~+115°C (DN15~DN40 only)
		W1				Insertion, -40°C~+130°C (DN25-DN5000)
		W1H				Insertion, -40°C~+180°C (DN25-DN5000)
Cable Length			L0			Default length, 9m(C2&C2U are only 5m)
			LXXX			Max length is 274m
Accessories				NA		None
				H		HART
				R		Dual relay output (No RS232 communication)
PT1000					P009	Clamp-on PT1000 (Default 9m cable length)
					PXXX	Clamp-on PT1000 (Customization)
					I009	Insertion PT1000 (Default 9m cable length)
					IXXX	Insertion PT1000 (Customization)

ULTRASONIC FLOW METER

Model	Suffix Code						Description
GIWU-226-S	❶	❷	❸	❹	❺	❻	**Wall-mounted Type 1.0% accuracy; DN15-DN2000 pipe size; OCT, Relay, 4-20mA, RS485;**
Output	1						OCT, Relay, RS232 & RS485, 4-20mA
	2						OCT, Relay, RS232 & RS485, 4-20mA, RTD
Sensor		CD01					Clamp-on, -40°C~+75°C (Default, DN25-DN2000)
		C1					Clamp-on, -40°C~+80°C (DN25-DN2000)
		C1U					Clamp-on, -40°C~+130°C (DN25-DN2000)
		C1H					Clamp-on, -40°C~+180°C (DN25-DN2000)
		C2					Clamp-on, 0°C~+65°C (DN15~DN40 only)
		C2U					Clamp-on, 0°C~+115°C (DN15~DN40 only)
		W1					Insertion, -40°C~+130°C (DN25-DN2000)
Power Supply			1				10~36V DC
			0				10~36V DC & 90-245 VAC
Cable Length				L0			Default length, 9m(C2&C2U are only 5m)
				LXXX			Max length is 274m
Accessories					NA		None
					SD		SD Card(32G)
					H		HART
PT1000						P009	Clamp-on PT1000 (Default 9m cable length)
						PXXX	Clamp-on PT1000 (Customization)
						I009	Insertion PT1000 (Default 9m cable length)
						IXXX	Insertion PT1000 (Customization)

Model	Suffix Code					Description
GIHU-226	❶	❷	❸	❹	❺	**Portable Type 1.0% accuracy; DN15-DN1200 pipe size; Battery powered, 3000 mAh**
Output	1					4-20mA, RS485
	2					4-20mA, RS485, RTD
Sensor		D1				Clamp-on, -40°C~+80°C (DN25-DN1200)
		D1U				Clamp-on, -40°C~ +130°C (DN25-DN1200)
		W1				Insertion, -40°C~ +130°C (DN25-DN1200)
		D2				Clamp-on, 0°C~ +65°C (DN15-DN40 only)
		D2U				Clamp-on, 0°C~ +115°C (DN15-DN40 only)
Mounting Bracket			ST			Single rail
			DT			Double rails
			SMT			Rail for D2 Series
Cable Length				L0		Default length, 5m
				LXXX		Max length is 30m
PT1000					P005	Clamp-on PT1000 (Default 5m cable length)
					PXXX	Clamp-on PT1000 (Customization)

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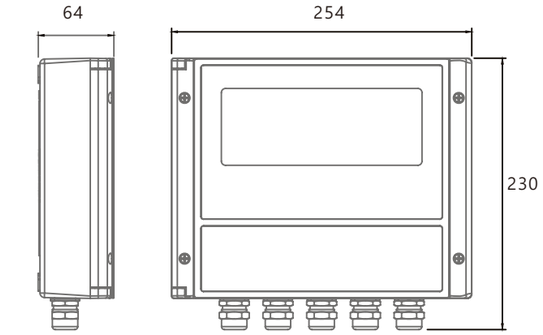
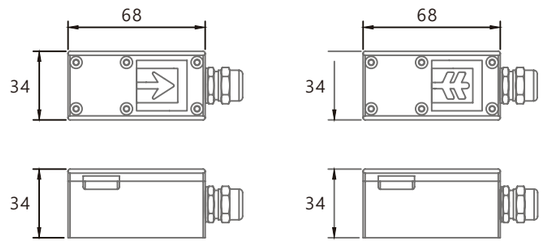
ULTRASONIC FLOW METER

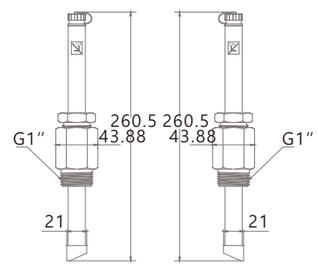
Dimensions



GIWU-226-Transmitter size (mm)

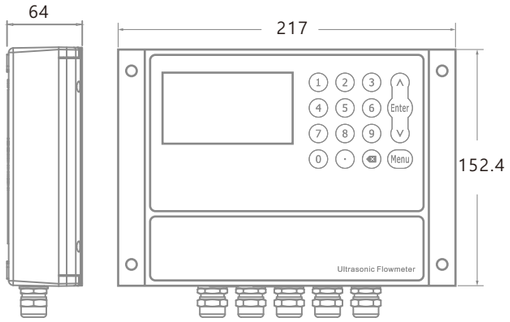


GIWU-226-Transducer size (mm)

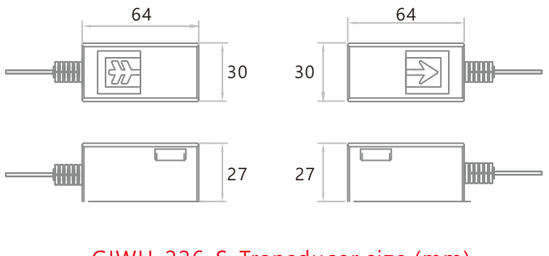


GIWU-226-Insertion size (mm)

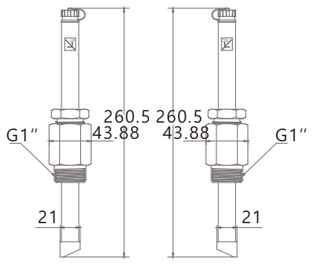
ULTRASONIC FLOW METER



GIWU-226-S-Transmitter size (mm)



GIWU-226-S-Transducer size (mm)



GIWU-226-S-Insertion size (mm)

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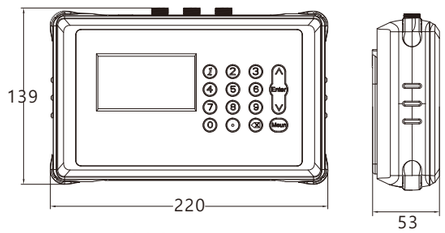
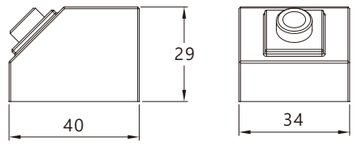
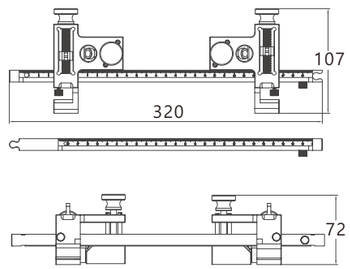
ULTRASONIC FLOW METER



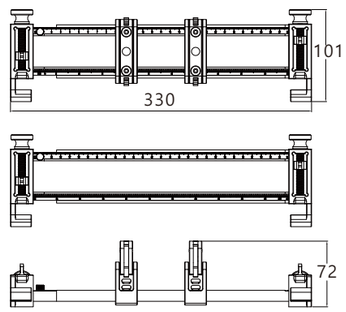
GIHU-226-Transmitter size (mm)



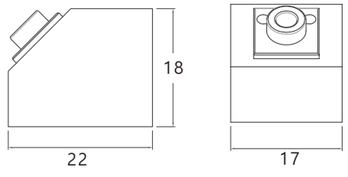
GIHU-226-Transducer size (mm)



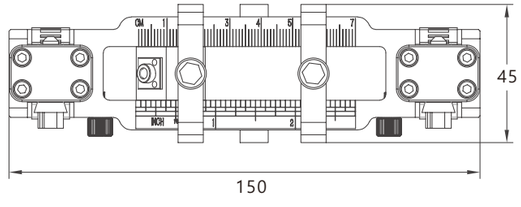
Single rail size (mm)



Double rails size (mm)

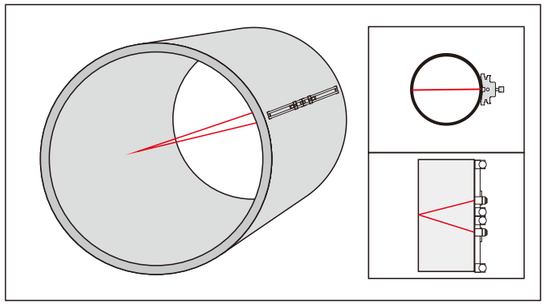


D2-Transducer size (mm)



D2-Mounting bracket (mm)

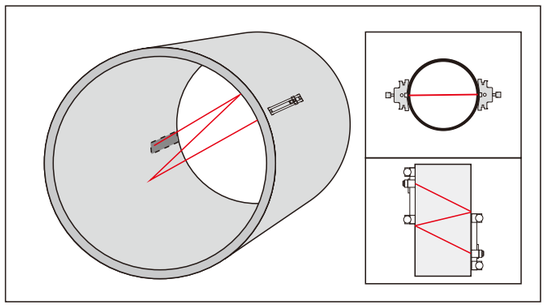
Installation



V Method

The V method is considered as the standard method.

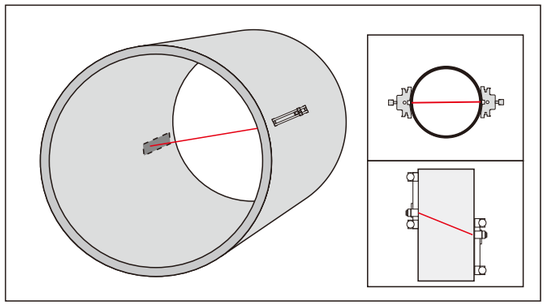
It usually gives a more accurate reading and is used on pipe diameters ranging from 25mm to 400mm (1"~16") approximately. Also, it is convenient to use, but still requires proper installation of the transducer, contact on the pipe at the pipe's centerline and equal spacing on either side of the centerline.



N Method

With the N method, the sound waves traverse the fluid three times and bounce twice off the pipe walls. It is suitable for small pipe diameter measurement.

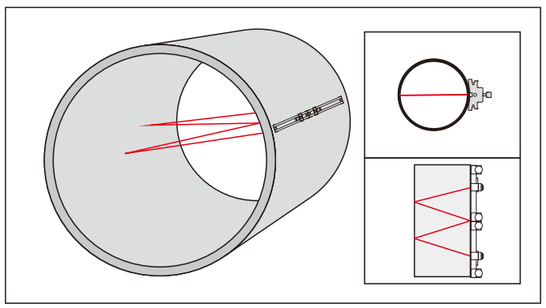
The measurement accuracy can be improved by extending the transit distance with the N method (uncommonly used).



Z Method

The signal transmitted in a Z method installation has less attenuation than a signal transmitted with the V method. This is because the Z method utilizes a directly transmitted (rather than reflected) signal which transverses the liquid only once.

The Z method is able to measure on pipe diameters ranging from 100mm to 2000mm (4"~80").



W Method

As with the N method, the measurement accuracy can also be improved by extending the transit distance with the W method. The sound wave traverses the fluid four times and bounces three times off the pipe walls.

The Z method is able to measure on pipe diameters ranging from 100mm to 2000mm (4"~80").

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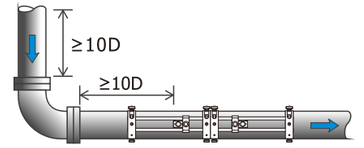
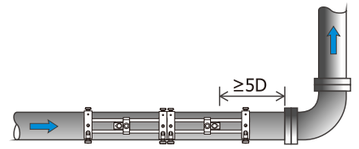
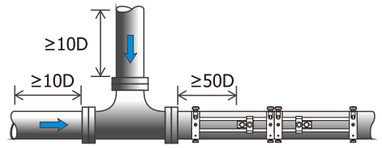
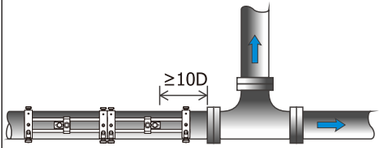
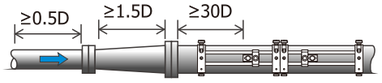
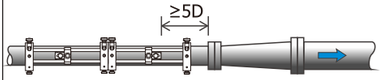
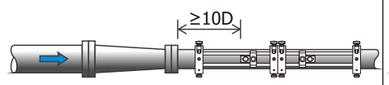
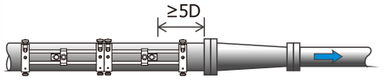
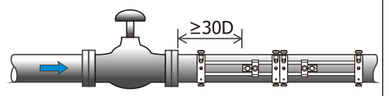
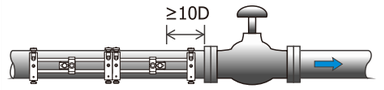
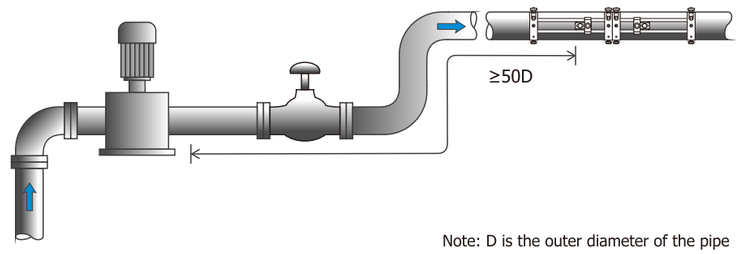
ULTRASONIC FLOW METER

Measurement Site Selection

When selecting a measurement site, it is important to select an area where the fluid flow profile is fully developed to guarantee a highly accurate measurement. Please follow these guidelines for selecting a proper measurement installation site:

* Choose a section of pipe, which is always full of liquid, such as a vertical pipe with flow in the upward direction or a full horizontal pipe.
*Make sure that the pipe surface temperature at the measuring point is within the transducer temperature limits.
*Consider the inside condition of the pipe carefully. If possible, select a section of pipe where its inside is free excessive corrosion or scaling.

Site	Installation point front straight section	Straight pipe section after installation point
Elbow		
Tee		
Expanded pipes		
Reducing pipe		
Valve		
Pump		

Note: D is the outer diameter of the pipe