

HS-FWM Series ULTRASONIC WATERMETERS



Model No. : HS-FWM

Model Type : Ultrasonic Watermeter

Features :

- Adopting dynamic zero and time compensation for accurate measurement
- Provides stable and more accurate flow measurement
- Wide measuring range. Lifespan of up to 15 years
- Protection class IP686. SS304 Body (Option SS316 or SS316L)

The HS-FWM ultrasonic flowmeter uses a transducer to send and receive signals. It is the principle that the transducer signal travels, and the downstream is faster than the upstream. The average flow rate can be maintained by measuring the moving time, and the volumetric flow rate can be calculated from the flow rate and the pipe cross-sectional area. It is a flow meter with built-in battery power supply for flow measurement.

GENERAL SPECIFICATIONS

Max. Working Pressure	1.6 Mpa
Temperature	T30, T50, T70, T90 (Default T30)
Accuracy	ISO 4064, Accuracy Class 2
Body Material	Stainless Steel 304 (option: SS316, 316L)
Batter Life	Up to 10 years (Consumption ≤0.5mW)
Protection Class	IP68
Environmental Temperature	-40 °C ~ 70 °C , ≤100% RH
Pressure Loss	△P10, △P16, (Based on different dynamic flow)
Climatic and Mechanical Environment	Class 0
Electromagnetic Class	E2
Communication Output	RS485 (Baud rate adjustable) Pulse (Default 2ml/pulse, changeable) Option, NB-IOT, GPRS
Display	9 digit LCD display volume, flow rate, pressure, error alarm, flow direction, low battery power alarm, output
RS485	Baud rate 2400bps, 4800bps, 9600bps, 19200bps (Default 9600 bps, Modbus-RTU)
Connection	Flange or Clip
Flow Profile Sensitivity Class	U3/D0 or U0/D0
Data Logger	Store the latest 10 year's data including Day, Month and Year. The date can be permanently saved even after the loss of power.
Frequency	1~4 times/second

		FLOW PARAMETERS								
Nominal Size	(mm)	50	65	80	100	125	150	200	250	300
	(inch)	2	2.5	3	4	5	6	8	10	12
Overload Flow Q4		78.75	125	200	312.5	312.5	500	787.5	1250	2000
Permanent Flow Q3		63	100	160	250	250	400	630	1000	1600
Transitional Flow Q2		0.101	0.160	0.256	0.400	0.400	0.640	1.008	1.600	2.560
Minimum Flow Q1		0.063	0.1	0.16	0.25	0.25	0.4	0.63	1	1.6
R=Q3/Q1		1000								
Q2/Q1		1.6								

HU Series ULTRASONIC WATERMETERS



The ultrasonic flowmeter HU is practically applicable to a wide range of measurements. Applicable to various liquids such as ultrapure liquid, drinking water, chemicals, sewage, recycled water, cooling water, river water, plant effluent, etc.

Model No. : HU

Model Type : Ultrasonic Watermeter

Features :

- High precision measurement : accuracy $\pm 1\%$, linearity: 0.5%, repeatability: 0.2%
- Wide measuring range : several types of transducers for selection, pipe size form DN25mm to DN6000mm
- Large capacity battery : Built-in rechargeable Ni-MH battery, provides more than 12 hours of continuous operation
- Multilingual menu support - English, customizable
- Large LCD screen - Displays instantaneous flow, accumulated flow (positive, negative, net), speed, work status, etc.
- Built-in data logger - stores more than 2000 lines of measuring data

GENERAL SPECIFICATIONS

Linearity	0.5%
Repeatability	0.2%
Accuracy	Better than $\pm 1\%$ for velocity above 0.03m/s
Response Time	0~999 second, user-configurable
Flow Range	$\pm 12\text{m/s}$
Measuring Pipe Size	24mm ~ 6000mm
Language	Chines-English, English-Italian, English-French
Totalizer	7-digit totalizer for net, positive and negative flow respectively
Liquid Type	Any single uniform liquid which can transmit ultrasonic
Security	Setup values Modifications Lockout. Access code unlocking
Display	4 x 16 letter
Communication Interface	RS-232 interface, 75~58600bps, compatible with full ultrasonic flowmeter and other UFM on enquiry
Transducers	Model TM-1 for standard, other 4 models for option
Transducer Cable	Standard 5mx2 or can be extended to 10mx2
Power Supply	3AAA built-in batteries (for over 12 hours of operation), 100V~240VDC adaptor
Data Logger	Built-in data logger can store over 2000 lines of data
Manual Totalizer	7-digit, calibrating by key
Housing Material	ABS

OPTIONAL TRANSDUCER

Type	Picture	Spec.	Model	Measure. Range	Temperature	Dimension
Clamp on		Small Size	TG-2	DN25-DN100	-30~90°C	45 × 25 × 32mm
		Medium Size	TM-1	DN50-DN700	-30~90°C	64 × 39 × 44mm
		Large Size	TL-1	DN300-DN6000	-30~90°C	97 × 54 × 53mm
High Temperature Clamp on		Small Size	TG-2-HT	DN25-DN100	-30~160°C	45 × 25 × 32mm
		Medium Size	TM-1-HT	DN50-DN700	-30~160°C	64 × 39 × 44mm
		Large Size	TL-1-HT	DN300-DN6000	-30~160°C	97 × 54 × 53mm
Mounting Bracket Clamp on		Small Size	HS	DN25-DN100	-30~90°C	318 × 59 × 85mm
		Medium Size	HM	DN50-DN300	-30~90°C	568 × 59 × 85mm
		Extended	EB-1	DN300-DN700	-30~90°C	188 × 59 × 49mm
High Temperature Mounting Bracket Clamp on		Small Size	HS-HT	DN25-DN100	-30~160°C	318 × 59 × 110mm
		Medium Size	HM-HT	DN50-DN300	-30~160°C	568 × 59 × 110mm
		Extended	EB-1-HT	DN300-DN700	-30~160°C	188 × 59 × 49mm

HU Series ULTRASONIC WATERMETERS



GENERAL SPECIFICATIONS

Converter	Principle	Transit-time ultrasonic flowmeter
	Accuracy	±1%
	Display	4x16 character LCD with backlight, support the language of Chinese, English and Italian
	Signal Output	1 way OCT pulse output (Pulse width 6~1000ms, default is 200ms)
	Data Interface	Insulate RS232 serial interface, upgrade the flowmeter software by computer
Pipe Installation Condition	Pipe material	Steel, Stainless steel, Cast Iron, Copper, Cement pipe, PVC, Aluminum, Glass steel product, liner is allowed
	Pipe Diameter	25~6000mm
	Straight Pipe	Transducer installation should be satisfied : upstream 10D, downstream 5D, 30D from the pump
Measuring Medium	Type of liquid	Single liquid can transmit sound wave, such as water (hot water, chilled water, city water, sea water, waste water, etc.), sewage with small particle contents, oil (crude oil, lubricating oil, diesel oil, fuel oil, etc.), chemicals (alcohol, etc.), plant effluent, beverage, ultrapure liquid, etc.
	Temperature	-30~160°C
	Turbidity	No more than 10,000ppm and less bubble
	Flowrate	0~±10m/s
Working Environment	Temperature	Converter (-20~60°C), Flow transducer (-30~160°C)
	Humidity	Converter (85%RH) Flow transducer (Ip67)
Power Supply	3AAA built-in NI-MH batteries 1.2V (for over 12 hours of operation), 90V~260VAC adaptor	
Power Consumption	1.5W	
Case Material	ABS	
Dimension	200x93x32mm (converter)	

STANDARD PHYSICAL MAP



HU Series ULTRASONIC WATERMETERS



The portable ultrasonic flowmeter HU-H is a state-of-the-art general purpose travel time flowmeter designed using FPGA chip and low voltage broadband pulse transmission.

Model No. : HU-H

Model Type : Ultrasonic Watermeter

Features :

- Easy to carry, compact and lightweight design
- Calculate positive and negative flows and cumulative measurements
- Add the SD card data auto-save function so your data will never be lost again.
- Rechargeable battery and universal power supply design
- Advanced modular integrated design, independent menu operation, large screen LCD backlit 4-line display
- Particularly suitable for on-site flow sensing for different pressure requirements
- Transmitter protection level: IP54
- Sensor protection level: IP68

GENERAL SPECIFICATIONS

Flow Range	±0.03 ft/s ~ ±20 ft/s (±0.01 m/s ~ ±6 m/s, 12 m/s optional)
Accuracy	±1% of measured value
Pipe Size	Clamp-on (25mm ~ 1200mm)
Pipe Material	Carbon steel, stainless steel, PVC
SD Card	Storage 1 GB
	Max 512 files
	Interval 5~60 seconds
Output	Analog output, 4~20mA, Max load 750Ω
Power Supply	11.1V Rechargeable Lithium Battery
Keypad	Tactile Keys
Displays	64x128 alphanumeric, Backlit LCD
Humidity	Up to 99% RH, Non-condensing
Temperature	Transmitter : -10°C ~ +50°C
	Transducer : 0°C ~ +80°C
Protection	NEMA 13, IP54
	Encapsulated design, IP68
Weight	Transmitter : approx. 1.0 Kg (1 full set with package : 10 Kg)



HS Series ULTRASONIC FLOWMETERS



The ultrasonic flowmeter HS-SWU801 can be applied to a wide range of measurement. Applicable to various liquids such as ultrapure liquid, drinking water, chemicals, sewage, recycled water, cooling water, river water, plant effluent, etc.

Model No. : HS-SWU801

Model Type : Ultrasonic Flowmeter

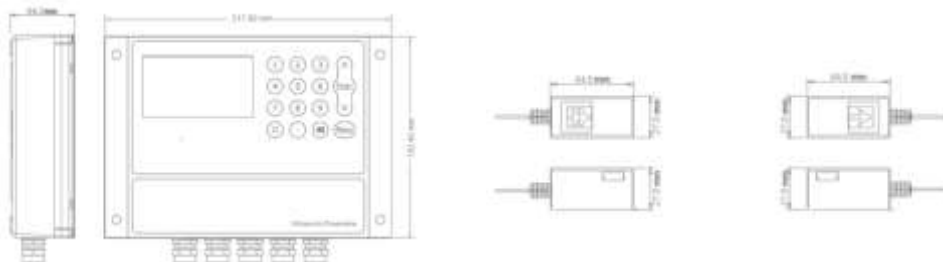
Features :

- High precision measurement - accuracy $\pm 1\%$, linearity: 0.5%, repeatability: 0.2%
- Wide measuring range - several types of transducers for selection, pipe size form DN25mm to DN6000mm
- Large capacity battery - Built-in rechargeable Ni-MH battery, provide more than 12 hours of continuous operation
- Menu support – English
- Large LCD screen - Displays instantaneous flow, accumulated flow (positive, negative, net), speed, work status, etc.
- Built-in data logger - stores more than 2000 lines of measuring data

GENERAL SPECIFICATIONS

Flow Range	± 0.09 ft/s ~ ± 16 ft/s (± 0.02 m/s ~ ± 5 m/s)
Accuracy	$\pm 1\%$ of measured value
Repeatability	0.2% of measured value
Linearity	$\pm 1\%$
Pipe Size	1" ~ 48" (25mm ~ 1200mm), Pipe size under 1" is an option.
Fluid	Water
Outputs	Analog output : 4~20mA, max. load 750 Ω Pulse output : 0~10kHz
Communication	RS232/RS485 Modbus
Power Supply	10~36VDC, 1A
Display	240x128 backlit LCD
Temperature	Transmitter : -14°F ~ 140°F (-20°C ~ +60°C) Transducer : -40°F ~ 176°F (-40°C ~ +80°C, standard)
Humidity	Up to 99% RH, non-condensing
Transmitter	PC/ABS, IP65
Transducer	ABS, IP68 Encapsulated design Double-shield transducer cable Standard/maximum cable length : 30ft/900ft (9m/274m)

PRODUCTS DIMENSIONS



HS Series ULTRASONIC FLOWMETERS



Model No. : HS-SWU901

Model Type : Ultrasonic Flowmeter

Features :

- Transmitter protection IP65, sensor protection IP68
- Positive and negative flow measurement, cumulative flow
- 50000 hours test without problems
- Traffic statistics by period
- Keyboard key life over 200,000 cycles
- RS485 communication interface, 4-20mA current signal, pulse output, MODBUS protocol

The wall-mounted ultrasonic flow meter HS-SWU901 is a state-of-the-art general purpose travel time flow meter designed using FPGA chip and low voltage broadband pulse transmission. Suitable for application in ultrapure liquid, drinking water, chemical products, raw sewage, recycled water, cooling water, river water, plant wastewater.

GENERAL SPECIFICATIONS

Flow Range	± 0.03 ft/s ~ ± 20 ft/s (± 0.01 m/s ~ ± 6 m/s)
Accuracy	$\pm 1\%$ of measured value
Pipe Size	Clamp-on (25mm ~ 1200mm)
Pipe Material	Carbon steel, stainless steel, PVC
Output	OCT Pulse output : 0~5000Hz Analog output : 4~20mA, max. load 750 Ω
Communication Interface	RS485, Modbus
Power Supply	10~36V DC, 1A
K Pad	16(4x4) key with tactile action
Display	20x2 lattice alphanumeric, backlit LCD
Humidity	Up to 99% RH, Non-condensing
Temperature	Transmitter : 14°F ~ 122°F (10°C ~ +50°C) Transducer : 32°F ~ 176°F (0°C ~ +80°C)
Protection	Transmitter : PC / ABS, IP65
Transducer cable	Standard cable length : 30ft (9m)
Weight	Transmitter : approx. 0.7Kg Transducer : approx. 0.4Kg (A full set with the package : 7Kg)



LEVEL METER ULTRASONIC LEVEL METER



Model Type : Ultrasonic Level Meter

Features :

- Smart sensor, RS485 communication
- Use of special anti-corrosion materials
- Blank and threshold voltage adjustable
- Built-in automatic temperature compensation
- Advanced echo analysis algorithms allow the sensor to adapt to different applications.

The ultrasonic level meter is designed to measure the depth of liquids. It is suitable for application in chemical, metallurgy, electricity, oil and water treatment.

GENERAL SPECIFICATIONS

Maximum Measurable Distance
(Depending on the model)

(1) 5m, (2) 10m, (3) 15m, (4) 20m, (5) 25m, (6) 30m, (7) 40m, (8) 50m, (9) 60m

Accuracy	±0.5% of rate
Resolution	(1) Range < 10mL 5m (2) Range > 10m: 10m
Frequency	40 kHz
Signal Output	4~20mA
Communication	RS485 (Optional)
Power Supply	220V AC / 24V DC
Case Material	PA6 / ABS
Blind Area	0.2~0.9m
Maximum Load	750 Ω
Ambient Temperature	-20°C ~ +55°C
Protection	Transmitter : IP65 Probe : IP68