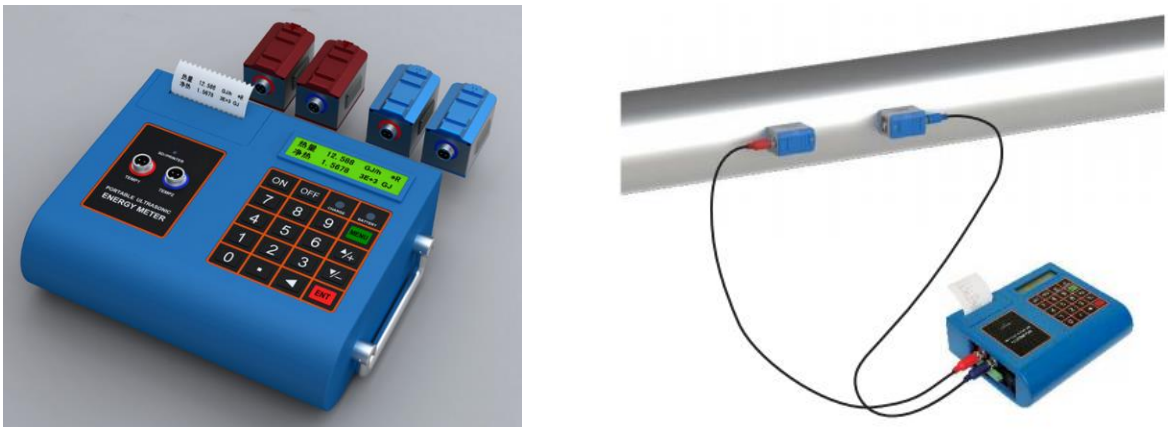
OI-TUF-2000 SERIES Clamp on type Ultrasonic Flowmeter

OI-TUF-2000H Type Handheld Ultrasonic Flowmeter



OI-TUF-2000P Portable Ultrasonic Flowmeter With The Printer

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1. OI-TUF-2000H Handheld Ultrasonic Flowmeter

Hand-held ultrasonic flow meters enable non-contact measurement of liquid flow. The flow is measured by mounting the sensor on the outer wall of the pipe. It has the characteristics of small size, convenient carrying and accurate measurement.

Widely used in tap water, heating, water conservancy, metallurgy, chemical, machinery, energy, and other industries. It can be used for production monitoring, flow verification, temporary inspection, flow inspection, water meter balance debugging, heat network balance debugging, energy saving monitoring, and is a necessary tool for timely flow detection.

1.1. Features

1. High Accuracy measuring:

Accuracy: *1%, linearity: 0.5%, repeatability: 0.2%

2. Wide measuring range:

Several types transducer for selection, measuring pipe size from DN25mm to DN6000mm.

3. Large capacity battery:

Built-in rechargeable NI-MH battery, provide over 12 hours of continuous operation.

4. Non-intrusive measuring:

Non-intrusive, clamp-on transducer, no pressure drop, no pipe disturbance.

5. Support Multiple Language Menu:

Chinese, English, Italian and other languages can be customized.

6. Large LCD display:

Display instantaneous flow, accumulated flow(positive, negative and net), velocity, working status etc.

7. Built-in data logger:

Built-in 24K data logger, store over 2000 lines measuring data

1.2. Measuring medium

This flowmeter can be virtually applied to a wide range of measurement. A variety of liquid applications can be accommodated: ultra-pure liquids, potable water, chemicals, raw sewage reclaimed water, cooling water, river water, plant effluent etc.

1.3. Clamp On Transducers

1. Install the clamp on transducer(with magnet)on the pipe, can finish the flow measurement. No pressure drop, no need cut off pipe;

2. Several types transducers for selection measuring pipe size from DN15mm to DN6000mm;

3. Several types transducers for selection.

1.4. Clamp On Mounting Bracket Transducers

1.Bracket transducer can simplify the ultrasonic flow meter installation process shorten installation time and improve Installation accuracy;

2. Install the clamp on bracket transducer(with magnet)on the pipe, can finish the flow measurement. No pressure drop, no need cut off pipe;

3. Several types bracket transducers for selection, measuring pipe size from DN15mm to Dn700mm;

4.Several types bracket transducers for selection, measuring temperature range from-30c to 160C.

1.5. Flow Sensor Type

Flow Transducer	Picture	Model	Measuring range	Temperature
Clamp on		TS-2 (small)	DN25-100	-30 ~ 90℃
		TM-1 (medium)	DN50-700	
		TL-1 (large)	DN300-6000	
High temp. Clamp on		TS-2-HT (small)	DN25-100	-30 ~ 160℃
		TM-1-HT (medium)	DN50-700	
		TL-1-HT (large)	DN300-6000	
Mounting bracket Clamp on		HS(small)	DN15-DN100	-30 ~ 90℃
		HM(medium)	DN50-DN700	
		EB-1(large)	＞DN300	
High temp Mounting bracket Clamp on		HS-HT(small)	DN15-DN100	-30 ~ 160℃
		HM-HT(medium)	DN50-300	
		EB-1-HT(large)	＞DN300	

1.6. Basic Technical Data

Linearity	0.5%
Repeatability	0.2%
Accuracy	±1% of reading at rates>0.2 mps
Response Time	0-999 seconds, user-configurable
Velocity	±32 m/s
Pipe Size	15mm-6000mm
Totalizer	7-digit totals for net, positive and negative flow respectively
Liquid Types	Virtually all liquids
Security	Setup values Modification Lockout. Access code needs unlocking
Display	4x8 Chinese characters or 4x16 English letters
Communication	RS-232, baud-rate: from 75 to 57600. Protocol made by the manufacturer and compatible with that of the FUJI ultrasonic flow meter. User protocols can be made by user requirements
Transducer Cord	Standard 5m x 2, optional 10m x 2
Power Supply	3 AAA built-in Ni-H batteries. When fully recharged it will last over 12 hours of operation.
Data Logger	Built-in data logger can store over 2000 lines of data
Manual Totalizer	7-digit press-key-to-go totalizer for calibration
Housing Material	ABS
Case Size	210x90x30mm
Main unit Weight	500g with batteries

1.7. Model Selection Guide

Model ①	Ultrasonic flowmeter type
OI-TUF-2000H	Handheld Ultrasonic Flowmeter
Optional Transducer (Multiple choice)	
-1	TS-2 (Standard small)
-2	TM-1 (Standard medium)
-3	TL-1 (Standard large)
-4	TS-2-HT (High temp. small)
-5	TM-1-HT (High temp. medium)
-6	TL-1-HT (High temp. large)
-7	HS (Small mounting bracket)
-8	HM (Medium mounting bracket)
-9	EB-1 (Large mounting bracket)
-10	HS-HT (Small high temp. mounting bracket)
-11	HM-HT (Medium high temp. mounting bracket)
-12	EB-1-HT (Larg high temp. mounting brackete)
Cable length	
-5	5m*2 (Standard)
-10	10m*2
①Example:OI-TUF-2000H -3/7/8 -5 Explain:OI-TUF-2000H+TL-1+HS+HM+5m*2 cable	

2. OI-TUF-2000P Portable Ultrasonic Flowmeter

The portable ultrasonic flow meter enables non-contact measurement of liquid flow.

Install the sensor on the outer wall of the pipe to complete the measurement of the flow.

Indeed. Built-in printer and SD card memory for instant or timed print settings

Measurements.

Widely used in tap water, heating, water conservancy, metallurgy, chemical, machinery,

Energy and other industries can be used for production monitoring, flow comparison, temporary inspection, flow quantitative inspection, water balance adjustment, thermal network balance adjustment, energy saving monitoring, flow inspection test necessary tools.

2.1. Clamp on Transducers:

1.Install the clamp on transducer (with magnet) on the pipe, can finish the flow. measurement. No pressure drops, no need cut off pipe.

2.Several types transducers for selection measuring pipe size from DN15mm to DN6000mm;

3.Several types transducers for selection.

2.2. Clamp on Mounting Bracket Transducers

1.Bracket transducer can simplify the ultrasonic flowmeter installation process shorten installation time and improve Installation accuracy

2. Install the clamp on bracket transducer(with magnet)on the pipe, can finish the flow measurement. No pressure drop, no need cut off pipe;

3. Several types bracket transducers fo selection, measuring pipe size from DN15mm to Dn700mm;

4.Several types bracket transducers for selection, measuring temperature range from-30c to 160C

2.3. Flow sensor type

Flow Transducer	Picture	Model	Measuring range	Temperature
Clamp on		TS-2 (small)	DN25-100	-30 ~ 90℃
		TM-1 (medium)	DN50-700	
		TL-1 (large)	DN300-6000	
High temp. Clamp on		TS-2-HT (small)	DN25-100	-30 ~ 160℃
		TM-1-HT (medium)	DN50-700	
		TL-1-HT (large)	DN300-6000	
Mounting bracket Clamp on		HS(small)	DN15-DN100	-30 ~ 90℃
		HM(medium)	DN50-DN700	
		EB-1(large)	＞DN300	
High temp Mounting bracket Clamp on		HS-HT(small)	DN15-DN100	-30 ~ 160℃
		HM-HT(medium)	DN50-300	
		EB-1-HT(large)	＞DN300	

2.4. Model Selection Guide

Model ①	Ultrasonic flowmeter type
OI-TUF-2000P	Portable Ultrasonic Flowmeter
Optional Transducer (Multiple choice)	
-1	TS-2 (Standard small)
-2	TM-1 (Standard medium)
-3	TL-1 (Standard large)
-4	TS-2-HT (High temp. small)
-5	TM-1-HT (High temp. medium)
-6	TL-1-HT (High temp. large)
-7	HS (Small mounting bracket)
-8	HM (Medium mounting bracket)
-9	EB-1 (Large mounting bracket)
-10	HS-HT (Small high temp. mounting bracket)
-11	HM-HT (Medium high temp. mounting bracket)
-12	EB-1-HT (Larg high temp. mounting brackete)
Cable length	
-5	5m*2 (Standard)
-10	10m*2
Output	
N	NO Output
1	4-20mA
①Example:OI-TUF-2000P-1/2/3 -5 -N Explain:OI-TUF-2000P+TS-2+TM-1+TL-1+5m*2 cable+No output	

3. OI-TUF-2000 SERIES Clamp on type Ultrasonic Flowmeter

The clamp on type ultrasonic flowmeter is composed of converter with clamp on type sensor.

Simply attach the clamp on type sensor to the surface of the pipe to complete the flow measurement of various liquids,compared with the traditional flow meter, it does not need to cut off the tube, and the installation is convenient and fast, realizing the non-destructive installation.

3.1. Typical application

The wall-mounting flow meter can be applied to a wide range of pipe flow measurements. Applicable liquids include pure liquids as well as liquid with small quantity of tiny particles.

Examples are:

-Sewage with small particle content;

-Oil (crude oil, lubricating oil, diesel oil, fuel oil, etc.);

-Chemicals (alcohol, acids, etc.);

-Beverage, liquid food;

-Ultra-pure liquids;

-Solvents and other liquid

3.2. Types of Converter

Items	Separated Mount					Compact Mount
	Wall Mount OI-TUF-2000B	Wall mount OI-TUF-2000S	Panel Mount OI-TUF-2000U	Explosion proof OI-TUF-2000D	Modular Mount OI-TUF-2000M	Fix Mount OI-TUF-2000F
Picture						

3.3. Types of Flow Sensor

Flow Transducer	Picture	Model	Measuring range	Temperature
Clamp on		TS-2 (small)	DN25-100	-30 ~ 90℃
		TM-1 (medium)	DN50-700	
		TL-1 (large)	DN300-6000	
High temp. Clamp on		TS-2-HT (small)	DN25-100	-30 ~ 160℃
		TM-1-HT (medium)	DN50-700	
		TL-1-HT (large)	DN300-6000	
Mounting bracket Clamp on		HS(small)	DN15-DN100	-30 ~ 90℃
		HM(medium)	DN50-DN700	
		EB-1(large)	＞DN300	
High temp Mounting bracket Clamp on		HS-HT(small)	DN15-DN100	-30 ~ 160℃
		HM-HT(medium)	DN50-300	
		EB-1-HT(large)	＞DN300	

3.4. Basic Technical Data

Itms		Specifications
Main unit	Accuracy	Better than ±1%
	Repeatability	Better than 0.2%
	Principle	Transit-time measuring principle
	Measurement Period	500ms
	Display	LCD with backlight, display accumulated flow/heat, instantaneous flow/heat, velocity, time etc.
	Output	Analogue output: 4-20mA or 0-20mA current output. Impedance 0~1kΩ. Accuracy 0.1%.
		OCT output: Frequency signal (1~9999HZ)
		Relay output: over 20 source signal (no signal, reverse flow etc.)
		RS485 serial port
	Input	Three analogue input
		Three-wire PT100 resistor input (optional)
	Other functions	Automatically record the totaliser data of the last 64 days / 64 months / 5 years; The power-on time and corresponding flow rate of the last 64 power on and off events. Allow manual or automatic flow loss compensation
Pipe	Material	Steel, stainless steel, cast iron, cement pipe, copper, PVC, aluminum, FRP etc. Liner is allowed
	Size	15-6000mm
	Straight pipe section	In the upstream it must be beyond 10D, in the downstream it must be beyond 5D, in the upstream the length must be beyond 30D fro the access of the pump. (D stands for pipe diameter)
Liquid	Types	Water, sea water, industrial sewage, acid & alkali liquid, alcohol, beer, all kinds of oils which can transmit ultrasonic single uniform liquid
	Temperature	Standard: -30˚C - 90˚C ，High-temperature：-30˚C - 160˚C
	Turbidity	Less than 10000ppm, with a little bubble
	Flow Direction	Bi-directional measuring, net flow/heat measuring
Environment	Temperature	Main Unit: -30˚C - 80˚C
		Transducer: -40 ℃ -110 ℃, Temperature transducer: select on enquiry
	Humidity	Main Unit: 85% RH
		Transducer: water-immersible, water depth less than 3m
Cable	Twisted Pair Line, standard length of 5m, can be extended to 500m (no recommended); Contact the manufacturer for longer cable requirement. RS-485 interface, transmission distance up to 1000m	
Power	AC220V or DC24V, 1.5W	
Protocols	MODBUS, M-BUS, Fuji extended protocol and other factory protocol	

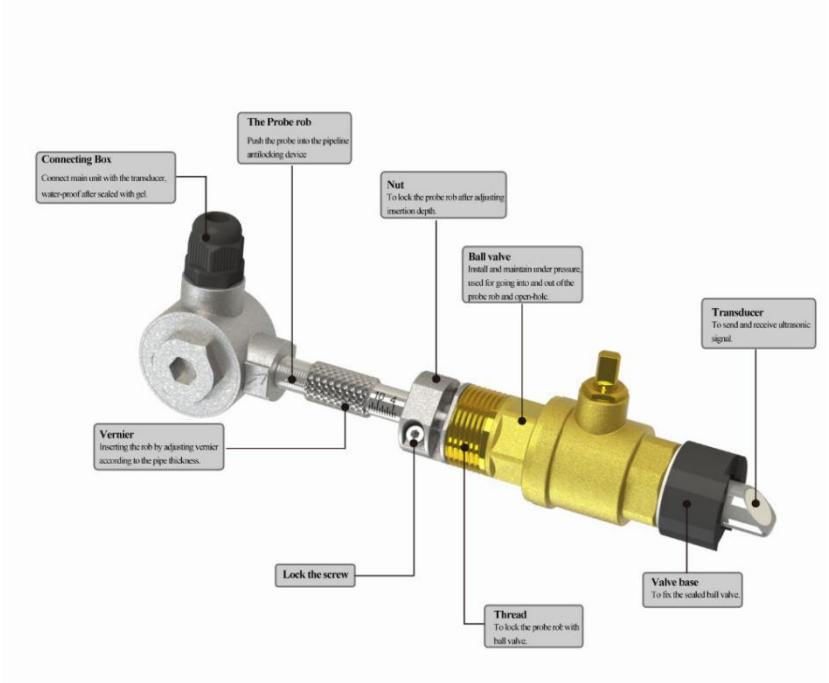
3.5. Model Selection Guide

Model	Ultrasonic flowmeter type
OI-TUF-2000B	Wall Mount (Blue plastic case)
OI-TUF-2000S	Wall mount (White plastic case)
OI-TUF-2000U	Panel Mount
OI-TUF-2000D	Explosion proof
OI-TUF-2000M	Module Type
OI-TUF-2000F	Fix Mount(Compact Mount)
Optional Transducer (Multiple choice)	
-1	TS-2 (Standard small)
-2	TM-1 (Standard medium)
-3	TL-1 (Standard large)
-4	TS-2-HT (High temp. small)
-5	TM-1-HT (High temp. medium)
-6	TL-1-HT (High temp. large)
-7	HS (Small mounting bracket)
-8	HM (Medium mounting bracket)
-9	EB-1 (Large mounting bracket)
-10	HS-HT (Small high temp. mounting bracket)
-11	HM-HT (Medium high temp. mounting bracket)
-12	EB-1-HT (Larg high temp. mounting brackete)
Cable length	
-5	5m*2 (Standard)
-10	10m*2
SD data memory card	
1	None
2	Yes

4. OI-TUF-2000 Insertion type Ultrasonic Flowmeter

The insertion ultrasonic flowmeter consists of a converter and a insertion type sensor.

Insertion type sensors can be installed by simply opening two mounting holes in the pipe surface. With the special opening tool, the insertion type ultrasonic sensor can be installed without water stop. Since the sensor is directly in contact with the fluid, the measurement is stable and reliable.



4.1 Types of Converter

Items	Separated Mount					Compact Mount
	Wall Mount OI-TUF-2000B	Wall mount OI-TUF-2000S	Panel Mount OI-TUF-2000U	Explosion proof OI-TUF-2000D	Modular Mount OI-TUF-2000M	Fix Mount OI-TUF-2000F
Picture						

4.2. Types of Flow Sensor

Insertion		TC-1 (standard)	DN50-6000	-30 ~ 160℃
		TC-2 (extended)		
		TP-1 (parallel)	DN200-6000	

4.3. Basic Technical Data

Principle & Parameters	
Principle	Transit-time
Accuracy	Flow meter: ±0.5%; Heat meter: ±2.0%.
Output	4~20mA analog
	OCT pulse
	Relay
Input	3 way 4~20mA analog input, acquisition signal of press and liquid level.
	Achieve heat measurement by connecting PT100 temperature sensors
Interface	RS485; MODBUS
Pipe Material	Steel, stainless steel, cast iron, copper, PVC, aluminum, etc.
Caliber	DN50mm~DN6000mm
Straight Pipeline	Upstream: 10D; Downstream: 5D; From the pump: 30D (D means outer diameter)
Medium	Single liquid that can conduct sound wave, such as water(-30℃~160℃).
Velocity	-12m/s~12m/s
Special Cable	Shielded twisted-pair cable, length≤50m.
Temperature	Main unit: -20℃~70℃; Transducers: -30℃~160℃
Protection Class	Main Unit: IP67; Sensors: IP68
Power Supply	DC24V ; AC85~264V; 50Hz
Consumption	1.5W

5. OI-TUF-2000 Pipe type Ultrasonic Flowmeter

The pipe type ultrasonic flowmeter is composed of a main converter and a pipe type sensor. The DN15-DN32 uses 几 type pipe type sensor, and the DN40 and above uses a standard pipe type sensor.

The pipe type ultrasonic flowmeter has the advantages of simple installation, low starting flow, high measurement accuracy, and no pressure loss.

5.1 Basic Technical Data:

Accuracy	±1%
Flow range	0~±10m/s
Size	DN15~DN6000mm
Medium Temp	-30C~160C
Signal output	4~20mA OCT output
Communication	MODBUS RS485
Data storage	SD card
Power supply	AC220V or DC24V
Protection grade	IP67(converter) IP68(sensor)

5.2 Types of Converter

Items	Separated Mount					Compact Mount
	Wall Mount OI-TUF-2000B	Wall mount OI-TUF-2000S	Panel Mount OI-TUF-2000U	Explosion proof OI-TUF-2000D	Modular Mount OI-TUF-2000M	Fix Mount OI-TUF-2000F
Picture						

5.3 Types of Flow Sensor

Inline Pipe Sensor	Picture	Connecting Method	Diameter	Temperature
π type		Thread	DN15-32	-30℃~160℃
π type		Flange	DN15-32	-30℃~161℃
Standard		Flange	DN40-1000	-30℃~162℃

6. OI-TUF-2000 Ultrasonic heat meter.

Easy installation.

High accuracy within ±1%

High protection class: Main unit: IP67; Transducers:IP68

Multiple output of 4-20mA, OCT pulse and relay; RS485 interface, support Modbus

Achieve heat measurement by connecting 3-wired heat transducers PT100.

6.1. Temperature Transducers

Temperature Transducer	Picture	Model	Measuring range	Temperature	Cutoff water
Clamp on		CT-1	≥ DN50	-40 ~ 160℃	No need
Insertion		TCT-1	≥ DN50	-40 ~ 160℃	Need
Insertion under pressure		PCT-1	≥ DN50	-40 ~ 160℃	No need
Insertion small sizes		SCT-1	< DN50	-40 ~ 160℃	Need

Contact Us:

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