TUF-2000P Portable ultrasonic flow meter realizes the non-contact measurement. It is ideal for flow surveys and closed-pipe application where non-invasive measurement of liquids is required.

Temperature and heat can also be measured by connecting clamp on temperature transducer. Widely be used in water supply, heat supply, chemical industry, machinery and energy resources.

| Features |

- **High Accuracy measuring**
  Accuracy: ±1%

- **Wide measuring range**
  Several types of transducers for selection, measuring pipe size from DN15mm to DN6000mm

- **Large capacity battery**
  Built-in rechargeable Ni-MH battery, provide over 12 hours of continuous operation

- **Built-in printer**
  Available to print data in real time, also available to timed print over 20 pre-set measuring results

- **Data storage**
  Store over 20 pre-set measuring results to SD card, make it easy to data analysis and statistics

- **Rs485 communication interface**
  Upload the parameters and measuring results to computer

- **Various input and output signal**
  Output signal: 4-20mA, pulse signal, relay signal
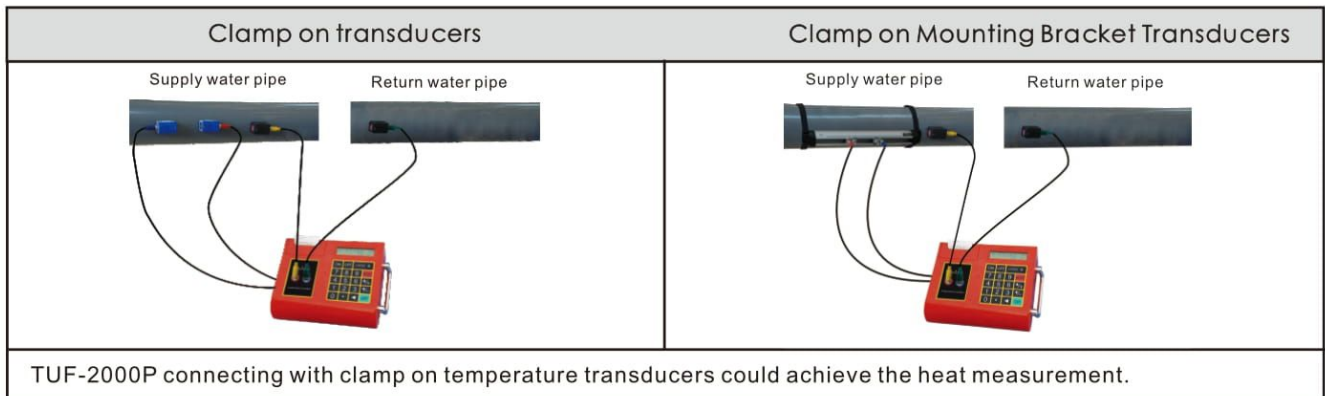 Input signal: 3 way 4-20mA

| Measuring Diagram |

Clamp on transducers	Clamp on Mounting Bracket Transducers
• Easy for installation No need to cutoff water, no pressure loss	• Simplify installation process, shorten installation time, improve installation accuracy. • Easy for installation, no need to cutoff water, no pressure loss

● Optional Transducers

Types	Picture	Spec.	Model	Measurement Range	Temperature	Dimension
Clamp on		Small Size	TS-2	DN15~DN100	-30~90℃	45×25×32mm
		Medium Size	TM-1	DN50~DN700	-30~90℃	64×39×44mm
		Large Size	TL-1	DN300~DN6000	-30~90℃	97×54×53mm
High temperature clamp on		Small Size	TS-2-HT	DN15~DN100	-30~160℃	45×25×32mm
		Medium Size	TM-1-HT	DN50~DN700	-30~160℃	64×39×44mm
		Large Size	TL-1-HT	DN300~DN6000	-30~160℃	97×54×53mm
Mounting Bracket Clamp on		Small Size	HS	DN15~DN100	-30~90℃	318×59×85mm
		Medium Size	HM	DN100~DN300	-30~90℃	568×59×85mm
		Extended	EB-1	DN300~DN700	-30~90℃	188×59×49mm
High Temperature Mounting Bracket Clamp on		Small Size	HS-HT	DN15~DN100	-30~160℃	318×59×110mm
		Medium Size	HM-HT	DN100~DN300	-30~160℃	568×59×110mm
		Extended	EB-1-HT	DN300~DN700	-30~160℃	188×59×49mm

| Heat Measuring Diagram |

Clamp on transducers	Clamp on Mounting Bracket Transducers
Supply water pipe Return water pipe	Supply water pipe Return water pipe

TUF-2000P connecting with clamp on temperature transducers could achieve the heat measurement.

- **Typical application**
  - Thermal power plant
  - Air conditioning refrigeration
  - Heating companies
  - Energy conservation and emission reduction
  - Heat exchange station

- **Optional temperature transducers**

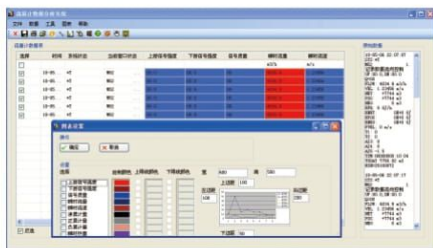| Picture	Types	Model	Measurement Range	Temperature	Cutoff water	Accuracy
	Clamp on temperature transducer PT100	CT-1	≥DN50	-40-160℃	No	100℃±0.8℃

| Parts Description |

Wiring board
Output signal: 4-20mA
            Pulse signal
            Relay signal
Input signal :3 way 4-20mA

- **SD CARD**
  Convenience for long-term storage of data.
  Available to do the data processing like
  tabulation, statistics, data analysis, print
  reports and make flow curve by using the
  matching data analysis software.

Thermal printer (24 column characters)
Available to print data in real time, also available
to timed print over 20 pre-set measuring results

Display
2×20 character
backlight screen,
LCD size: 85×19mm

Carrying case
High-strength carrying case, easy to take,
dustproof, waterproof and impact resistance.

Temperature and heat measurement
Convenient to measure temperature and heat
rate by connecting clamp on temperature transducers.

TUF-2000P Portable Ultrasonic Flow Meter

| Datasheet |

Items		Performance & Parameter
Convertor	Principle	Transit time ultrasonic flowmeter
	Accuracy	±1%
	Display	2×20 character LCD with backlight, support the language of Chinese, English and Italian
	Signal Output	1 way 4-20mA output, electric resistance 0~1K, accuracy 0.1%
		1 way OCT pulse output(Pulse width 6~1000ms, the default value is 200ms)
		1 way relay output
	Signal Input	3 way 4-20mA input, accuracy 0.1%, acquire signals such as temperature, press and liquid level
		Achieve to heat measurement by connecting the temperature transducer PT100.
	Data Interface	Insulate RS485 serial interface, upgrade the flowmeter software by computer, support MODBUS
	Data Record	Thermal printer, external SD card(2G of capacity)
Pipe Installation Condition	Material	Steel, Stainless steel, Cast iron, Copper, Cement pipe, PVC, Aluminum, Glass steel product, liner is allowed.
	Diameter	15~6000mm
	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 partical content; Oil(crude oil, lubricating oil, diesel oil, fuel oil, etc.) Chemicals(alcohol, etc.); Plant effluent; Beverage; Ultra-pure liquids, etc.
	Temperature	30~160℃
	Turbidity	Less than 10000ppm and little bubble
	Flowrate	0~±10m/s
Working Environment	Temperature	Convertor: -20~60℃; Transducer: -30~160℃
	Humidity	Convertor: 85%RH; Transducer protection level: IP67
Power Supply		8 built-in Ni-MH batteries 1.2V(for over 20 hours of operation). Could operate 8 hours by connecting 4-20mA signal output. 90V - 260V AC adapter
Power Consumption		1. 5W

| Ordering Code |

TUF-2000P- [Optional Transducer] – [Cable length] – [Heat Measurement] – [Input Signal]

Cable length:
5 5m×2 (standard)
10 10m×2

Heat Measurement:
N No heat measurement
1 Heat measurement

Input Signal:
N no output
1 4-20mA output (please specify range)

Example: TUF-2000P-HS，HM，TL-1-5-N-N

Explanation: portable ultrasonic flow meter+small size mounting bracket transducer+ medium size mounting bracket transducer+ large size clamp on transducer+ 2×5M cable, no heat measurement, no 4-20mA signal output