

DUS-TT-P

ULTRASONIC HANDHELD FLOWMETER

FEATURES

- **Clamp-on transducers**

No pressure drop, no intervention on the pipe

- **Wide measuring range**

DN15 to DN6000 ~ Several types of transducers

- **High measurement accuracy**

Accuracy : 1% ~ Linearity : 0.5 % ~ Repeatability : 0.2 %

- **Communication interface**

RS-232, 75-57600 bps, compatible with Fuji flowmeter

- **Integrated data logger**

2000 lines of registration data

- **Large LCD screen 4 × 16 characters**

Display of instantaneous flow, cumulative flow, speed, status

- **Large battery capacity**

Built-in Ni-MH battery, 12 hours running time

- **Compact & Design**

Dimensions : 210×90×30 mm ~ Weight: 0.5 kg



Handheld Transit Time Ultrasonic Flow Meters

Series : DUS-TT-P

APPLICATION

- Water (hot water, cooling water, potable water, sea water etc.)
- Petroleum products
- Chemicals, including alcohol, acids, etc
- Beverage, food and pharmaceutical processors
- Secondary sewage, waste treatment, etc.
- Power plants, Metallurgy and mining applications
- Pipeline leak detection, inspection, tracking and collection



DESCRIPTION

Series **DUS-TT-P** Handheld Transit Time Ultrasonic Flow Meter is carefully designed so that it is very compact and easy to use. A user can use hand to hold as well as to operate the flow meter main unit. The user-interface is self-explanatory and very easy to follow. Besides, the unique clamp-on fixture design makes the installation very simple and no special skills or tools required. Due to the non-intrusive nature of the clamp-on technique, there is no pressure drop, no moving parts, no leaks and no contamination.

FEATURES

- Compact design, light-weight and user-friendly.
- Principle of Transit Time and MultiPulse™ Technology.
- Can be used for mobile measurement, flow rate calibration, data comparing, meters running status checking
- 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.



PRINCIPE OF MEASUREMENT

DUS-TT-P transit time flow meter utilizes two transducers that function as both ultrasonic transmitters and receivers.

The transducers are clamped on the outside of a closed pipe at a specific distance from each other. The transducers can be mounted in V-method in which case the ultra sound transverses the pipe twice, or W-method in which case the ultra sound transverses the pipe four times, or in Z-method in which case the transducers are mounted on opposite sides of the pipe and the ultra sound transverses the pipe only once.

The selection of mounting method depends on pipe and liquid characteristics. When the flow meter works, the two transducers transmits and receives ultrasonic signals amplified by multi beam which travels firstly downstream and then upstream. [Figure 1]

Because ultra sound travels faster downstream than upstream, there will be a difference of time of flight (Δt). When the flow is still, the time difference (Δt) is zero.

Therefore, as long as we know the time of flight both downstream and upstream, we can work out the time difference, and then the flow velocity (V) and flow volume (Q) via the following formula.

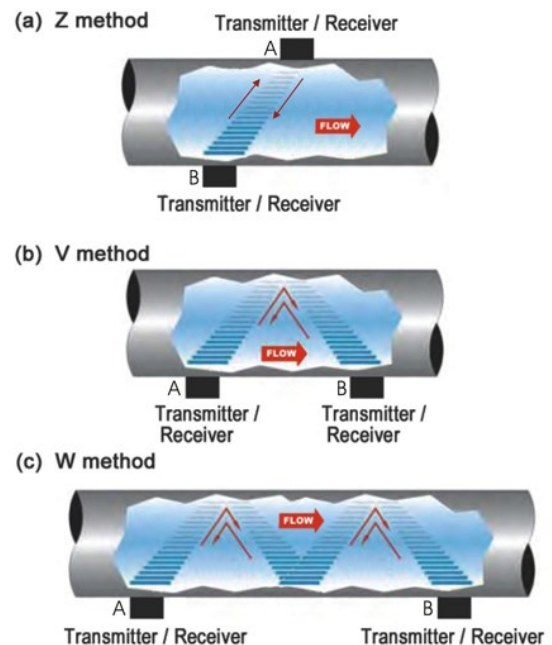
$$V = K \cdot D \cdot \Delta t$$

V: Liquid velocity

K: Constant

D: Distance between the two transducers

Δt : Difference in time of flight



[Figure 1]



SPECIFICATIONS

Handheld Flowmeter DUS-TT-P

Principle	Transit time Ultrasonic Flowmeter
Accuracy	±1%
Communication	RS-232, 75-57600 bps, Pulse output
Display	Large LCD Display 4x16 characters
Pipe Diameter	15~6000 mm
Datalogger	2000 rows of record data
Response time	0~999 seconds configurable
Totalizer	7 Digit, positive and negative net flow
Security	Lock screen, unlock with password
Fluide Type	Any single, uniform fluid that can transmit ultrasound
Fluid Temperature	-30°C ~ 160 °C
Turbidity	Not more than 10000 ppm
Speed	0~± 32 m/s bidirectional
Humidity	85% HR
Power supply	Built-in Ni-MH battery, operating time 12 hours ~ 100V-240VAC adapter
Case material	ABS
Dimensions	200*90*32mm
Weight	0.5 kg

Clamp-on Transducers

Cables 2x 5 m in standard (other on request)

Types	Reference	DN	Temperatures
Small DN	TS	DN15~DN100 mm	-30 °C~90°C
Medium DN	TM	DN50~DN700 mm	-30 °C~90°C
Large DN	TL	DN300~DN6000 mm	-30 °C~90°C
High temperature small DN	TS-HT	DN15~DN100 mm	-30 °C~160°C
High temperature Medium DN	TM-HT	DN50~DN700 mm	-30 °C~160°C

Transducers with mounting rail

Types	Reference	DN	Températures
Petit DN	RS	DN15~DN100 mm	-30 °C~90°C
Moyen DN	RM	DN50~DN300 mm	-30 °C~90°C
Grand DN	RL	DN300~DN700 mm	-30 °C~90°C
Haute température Petit DN	RS-HT	DN15~DN100 mm	-30 °C~160°C
Haute température Moyen DN	RM-HT	DN50~DN300 mm	-30 °C~160°C

Handheld Transit Time Ultrasonic Flow Meters

Series : DUS-TT-P

PARTS IDENTIFICATION

Débitmètre portable de poche DUS-TT-P



STANDARD TRANSDUCERS



TS



TM



TL

HIGH TEMPERATURE TRANSDUCERS



TS-HT



TM-HT



TL-HT

TRANSDUCERS WITH RAIL



RS



RM



RL



RS-HT



RM-HT



Handheld Transit Time Ultrasonic Flow Meters

Series : DUS-TT-P

ORDER CODE

Handheld Flowmeter

Reference : **DUS-TT-P**
Interface RS-232
Pulse output
Integrated data logger
Battery Ni-MH autonomy 12h
Charger 100V-240VAC
House of protection

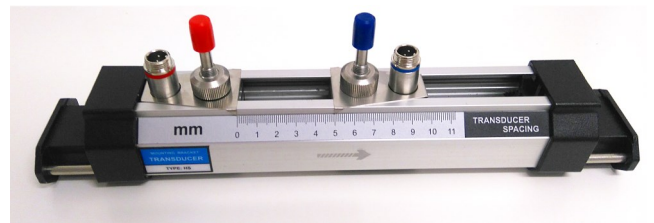
2x Transducers

TS DN15 à DN100 mm ~ Temperature -30 °C~90°C
TM DN50à DN700 mm ~ Temperature -30 °C~90°C
TL DN300 à DN6000 mm ~ Temperature -30 °C~90°C
TS-HT DN15 à DN100 mm ~ Temperature -30 °C~160°C
TM-HT DN50 à DN700 mm ~ Temperature -30 °C~160°C

OPTION

2x Transducers with Rail

RS DN15~DN100 mm ~ Temperature -30 °C~90°C
RM DN50~DN300 mm ~ Temperature -30 °C~90°C
RL DN300~DN700 mm ~ Temperature -30 °C~90°C
RS-HT DN15~DN100 mm ~ Temperature -30 °C~160°C
RM-HT DN50~DN300 mm ~ Temperature -30 °C~160°C



Standard delivery

- 1 x Handheld Ultrasonic Flowmeter
- 2 x Transducer (with rail if ordered)
- 2 x 5 m connection cable
- 1 x Integrated datalogger
- 1 x RS232 interface
- 1 x Pulse output
- 2 x Fastening chains
- 1 x AAA Ni-H Battery 1 + Charger
- 1 x House of protection
- 1 x tape measure
- 1 x Heavy duty aluminum carrying case
- 1 x Instructions manual