DMTFH Handheld Ultrasonic Flow Meters

Series DMTFH 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.

▲Transmitter & Transducer

▲Full set of Handheld

▲ Data logger

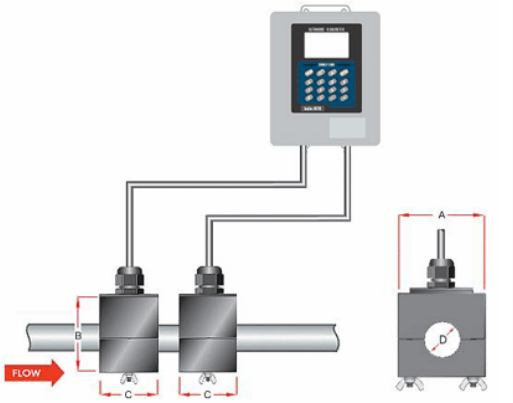
Features:

1. Compact design, light-weight and user-friendly.
2. Principle of Transit Time and MultiPulse^{TM} Technology.
3. Can be used for mobile measurement, flow rate calibration, data comparing, meters running status checking.
4. 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.
5. Data Logger functions. The capacity is based on users' choice, and the maximum can reach 8GB. Users can store 5 years' data in it at least and user can read, edit and export the data for reference and analysis.

Applications:

- 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 miming applications
- Pipeline leak detection, inspection, tracking and collection

Size	A	B	C	D
K1: 3/4", 1"	55	39	42	34
K2: 3/4", 1", 1-1/4"	64	46	42	43
K3: 1-1/4", 1-3/4", 2"	80	46	42	61



Note: K transducers utilize the Round-Clamp method, and the transducers' transmitting and receiving sides are connected with the pipe surface thoroughly to acquire enough coupling area, better reliability, stability, etc.

Principle of Measurement

DMTF 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.

$$V=K*\Delta t$$

$$Q=S*V$$

Where: V Liquid velocity
K Constant
Δt Time difference
Q Flow rate
S Sectional area of pipe

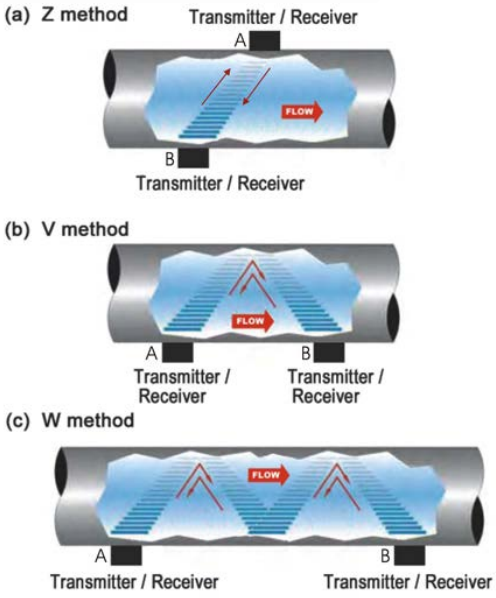


Figure 1

Specifications

Transmitter	Power Supply	3 AAA Ni-H built-in batteries. When fully recharged it will last over 12 hours of operation. 90-240VAC for the charger
	Velocity	0.003 to 12 m/s, bi-directional
	Display	4 line×16 digits LCD, it can display total flow, flow rate, velocity and meter running status etc.
	Units Rate Totalized	User Configured (English and Metric) Rate and Velocity Display gallons, ft^3, barrels, lbs, liters, m^3,kg
	Output	Frequency, RS232; options: up to 8 GB Data logger
	Accuracy	±1.0%~2.0% of reading at rates >0.5 m/s
		±0.005 m/s of reading at rates <0.5 m/s
	Sensitivity	0.003m/s
	Repeatability	0.2% of reading
	Security	Keypad lockout, access code enable
	Dimensions and Weight	100*204*34 Weight: <0.5kg
Transducer	Liquid Types Supported	Virtually most any liquid containing less than 5% total suspended solids (TSS) or aeration
	Suited Liquid Temperature	Std. Temp.: -40~121°C High Temp.: -40~25°C
	Pipe Size	Std M transducer: DN40-1000 L transducer: DN1000-4500 S transducer: DN20-50 K type transducer: DN20-50
	Dimensions and Weight	S: Size:42*25*25; weight:<0.2kg M: Size:60*43*43; weight:<0.5kg L: Size:80*53*53; weight:<1.0kg
	Data Logger Software	Optional 512M to 8GB SD card Windows-based Software Utility, data logging, data report, and data curve and analyze.

Parts Identification:

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Transmitter:

Handheld transmitter

Transducers:

K transducer

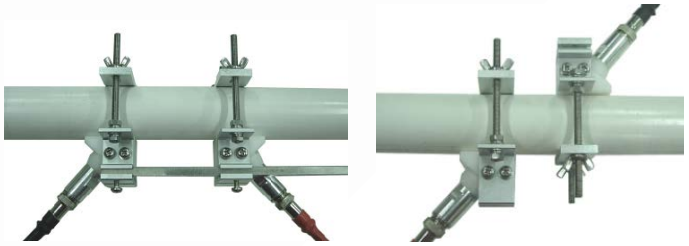
High temperature transducer

S-Transducer

M-Transducer

L-Transducer

M-Mounting Frame (V method and Z method)



S-Mounting Frame (V method and Z method)

Accessories:

Portable Case

Stainless Steel Strap

Flexible belts

Couplant

DMTFH Handheld Ultrasonic Flow Meter Selection Table

Model DMTFH -X X -X /*（Transducers）

Handheld Series

Output Selection 1

N—N/A

1—Frequency (Flow rate or Totalizer)

2—RS232 **Note: RS232 and Data logger cannot be used at the same time.**

3—Data Logger & Software

Output Selection 2

Same as Output Selection 1

Power Supply (Charger connector type)

D—90-240VAC

Model DH -X -X -X -X -X

Transducer Type

S— Small (DN20-50)

M— Medium (DN40-1000)

L— Large (DN1000-4500)

Kxx— K Small-Pipe Round Clamp-on (DN20-50), xx is inside Diameter.

(Above transducers material is POM, if you need stainless steel transducers, please contact the factory.)

Mounting Frame

N— None

FS— for DN20-50

FM— for DN40-600

Transducers Temperature

N— - 40～121°C

H— - 40～250°C (Only for S, M transducer. If larger transducer, consult us.)

Mounting Type

N-Common

M-Magnetic force (suitable for pipe above DN80)

Cable Length

4m—4 meters straight cable (STD.)

Xm—Common cable Max 300m

XmH—High temp. cable Max 300m

Parts Number Construction example:

DMTFH-1 2-D /DH-M-N-N-N-4m

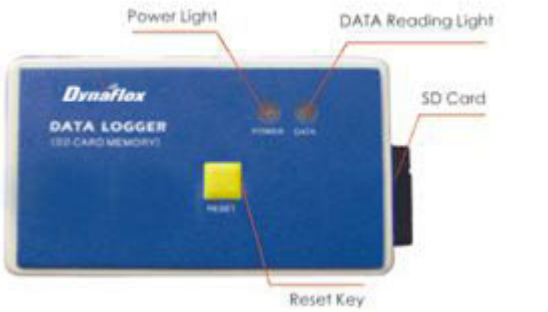
Description: DMTFH Handheld ultrasonic flow meter, Frequency and RS232 output, with 90-240VAC power supply; Standard M type transducer, no mounting frame, standard temperature -40~121℃, common mounting type, 4m straight cable.

Data Logger and Software Utility

Features:

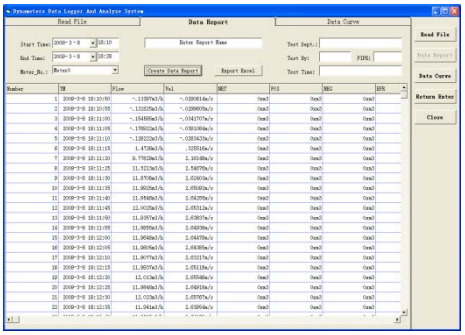
1. Provides data logging, based on SD card data memory, the memory capacity can be 512M,1GB, 2GB, 4GB, 8GB. Normally, 1GB can store 5 years data with 5 minutes logging interval.

2. Very easy to read data from SD card (just plug it out from Dynaflox Data Logger, and run Dynaflox Data Logging and Analyze software, browse the SD card file).

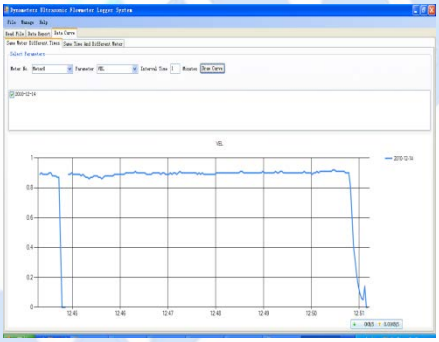


▲Data logger

3. Data report and Data Curve functions (Figure2, Figure3).



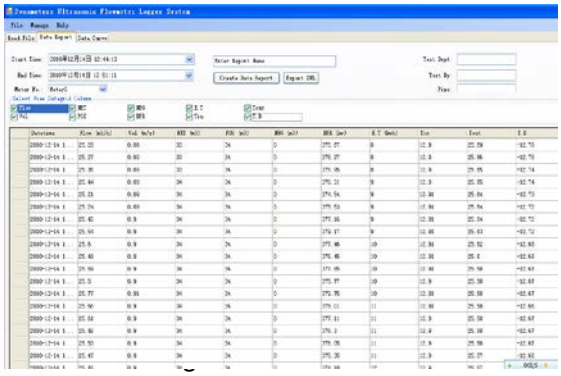
▲Figure 2



▲Figure 3

4. User can edit, generate Excel report and print it on PC (Figure 4).

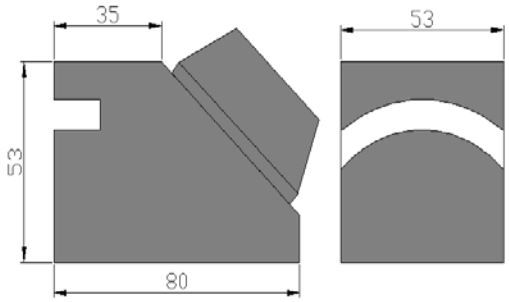
5. Logging Parameters: Date and Time, Flow Rate, Velocity, Positive total flow, Negative total flow, Net total flow, Total Heat flow, Temperature in, Temperature out, Temperature difference and Heat flow rate.
If user is interested in other parameters, please consult us. Users can delete the unnecessary parameters from Excel Table and then print the data table.



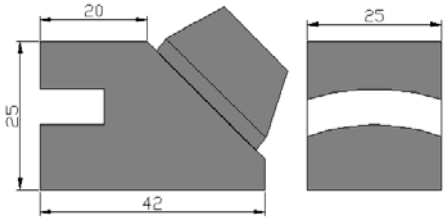
6. Users can download the software from our website: www.dynaflox.com

Parts & Dimensions

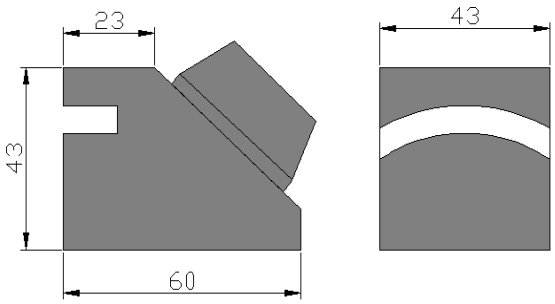
Handheld Transmitter



L Transducer



S Transducer



Std. M Transducer

DYNAFLOX SHANGHAI CO., LTD.
No.106 Qianpu Road,Eastward New Area
Songjiang Industrial Zone,Shanghai,China
TEL: +86-21-67602289
FAX: +86-21-67602287
ZIP: 201611
E-mail: info@dynaflox.com.cn
Website: www.dynaflox.com