Series DMTFF Flanged

Series DMTF Flanged Transit Time Ultrasonic Flow Meter uses transit-time ultrasonic technology in which the signal is transmitted and received alternately between 2 flow sensors and the "time of flight" determines the flow rate. Applications include both commercial and consumable water measurement. Long-term stability and a wide measurement range make it possible not only to measure water consumption, but also to monitor systems for water leakage.

Features:

◆Calibrated in manufacture's lab, field setup is unnecessary.

◆ Measurement is independent of fluid conductivity for a wider applicability than magnetic meters.

◆ Available including up to 8GB event data logger, can search the event of totalizer flow, flow rate, velocity etc.

◆Parallel operation of positive, negative and net flow totalizer, while the output of totalizer pulse and frequency output are transmitted via open collector.

◆ Re-calibration or maintenance is easy, no processing interrupted, hot-tap the transducers.

Applications:

◆Water, including hot water, chilled water, city water, sea water, etc.
◆Sewage and drainage water with small particle quantity.
◆Oil, including crude oil, lubricating oil, diesel oil, fuel oil, etc.
◆ Chemicals, including alcohol, acids, etc.
◆Solvents
◆Beverage and food processors
◆HVAC hot and cool water, water /glycol solutions.
◆ Water and waste treatment
◆ Power plants (nuclear power plants, thermal & hydropower plants), heat energy boiler feed water.
◆Energy consumption supervision and water conservation management
◆Metallurgy and miming applications (e.g., acid recovery)
◆Marine operation and maintenance
◆Pulp and paper industries
◆Pipeline leak detection, inspection, tracking and collection
◆Energy measurement and balancing
◆Network monitoring

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(△ t). When the flow is still, the time difference(△ t) 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*D* △ t

V: Liquid velocity

K: Constant

D: Distance between the two transducers

△ t : Difference in time of flight

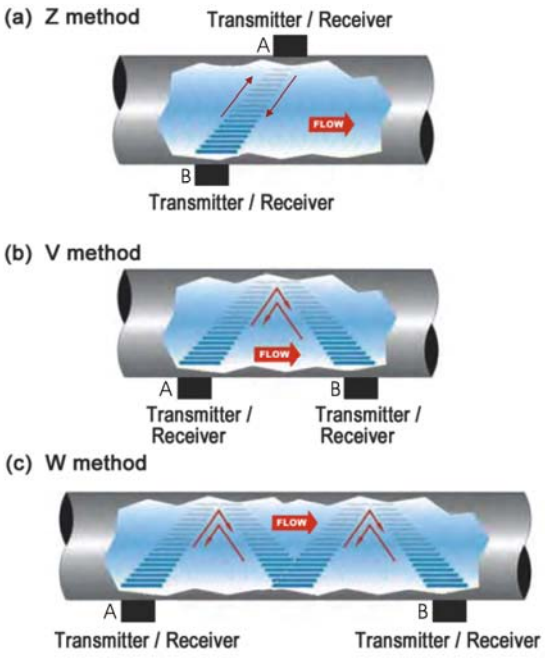


Figure 1

Selection Table of DMTFF Flanged Ultrasonic Flow Meter

Transmitter Selection

Model DMTFF – X – X X X X - X

Flanged Series

Approvals
N—N/A
Ex—ExdIIBT6

Power Supply
A—110VAC
B—220VAC
E—24VDC

Output Selection 1
N—N/A
1—4-20mA
2—Pulse Output（Flow Rate or Totalizer Output）
3—Relay
4—RS232
5—RS485
6—Hart+(4-20mA)
7—ModBus
8—Data Logger & Software
9—Heat Flow
(Two loops temperature transmitter 4-20mA input)

Output Selection 2
Same as Output Selection 1

Output Selection 3
Same as Output Selection 1

Note:
Can measure the lowest velocity of 0.003m/s, inlet and outlet of the pipe can be mounted according to the request of users. Pipe Sizes: DN15, DN20, DN25, DN32, DN40, DN50, the specifications of inlet pipe can be selected by users: DN6, DN10, DN12, DN15, DN18, DN20, DN25, DN32, DN40, and DN50. Sanitary type can also provide be according to request of users.
It can measure all kinds of Micro-flow solution, chemical liquid, ultra pure water, water, liquid, media, etc.

Transducer Selection

DC - X - X - X - X - X

Flanged Series

Transducer Type

0—Common flanged type (65-2000mm)

1—S-Series small flanged type (20-65mm)

2— Very low flow rate flanged type (15-50mm)

Pressure Level

A—1.0MPa

B—1.6 MPa

C—Please contact the factory if High Pressure

Pipeline Material

0—Carbon Steel

1—Stainless Steel

Pipeline Diameter

0012—DN12

1200—DN1200

Cable Length

XXX (meter)

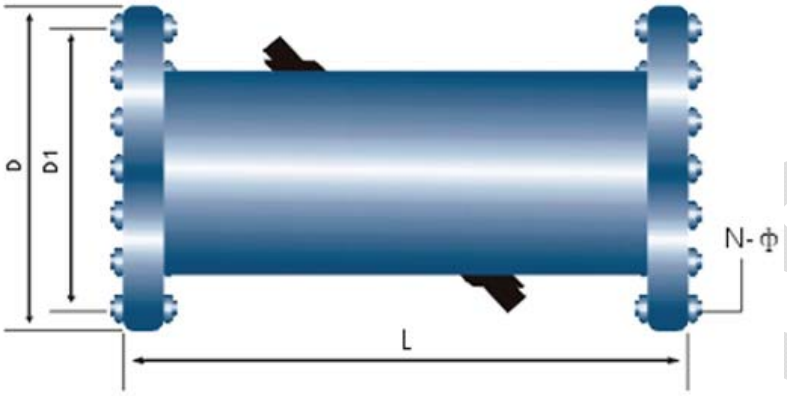
The Maximum can reach to 300m, also can contact with the factory for details.

Parts Number Construction example:

DMTFF–N-B1NN-N/DF-0-B-0-0400-030

Description: DMTF Flanged ultrasonic flow meter, 220VAC power supply, 4-20mA output, non-multiple output selection; common pipeline Flange mounting transducer, pressure is 1.0Pa, pipeline is ND400, transducer cable length is 30m.

Parameters of Flanged Transducer



Size ND	Transducer Length	Flange Size			Rated Pressure(Mpa)
（mm）	L（mm）	D	D1	N-φ	
50	200	165	125	4-18	1.6
65	200	185	145	4-48	
80	225	200	160	8-18	
100	250	220	180	8-18	
125	250	250	210	8-18	
150	300	285	240	8-22	
200	350	340	295	12-22	
250	450	405	355	12-26	
300	500	460	410	12-26	
350	550	520	470	16-26	
400	600	580	525	16-26	
450	700	640	585	20-30	
500	800	670	620	20-34	
600	1000	780	725	20-36	
700	1100	860	810	24-36	1.0
800	1200	975	920	24-39	0.6
900	1300	1075	1020	28-39	0.6
1000	1400	1175	1120	28-42	0.6
1100	1500	1355	1290	32-45	0.6
1200	1600	1455	1310	32-48	0.6
1400	1800	1685	1590	36-48	0.6
1600	2000	1930	1820	40-55	0.6
1800	2200	2130	2020	40-55	0.6
2000	2400	2345	2220	48-60	0.6

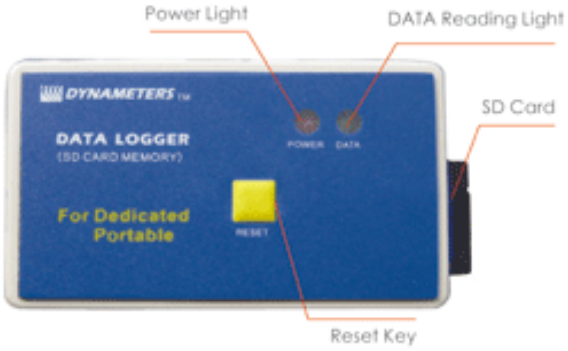
Specifications

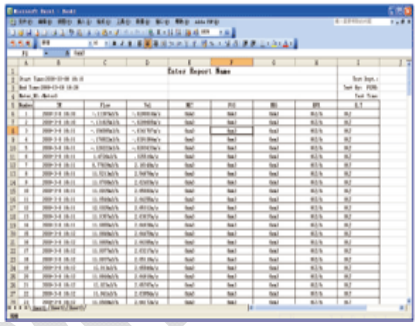
Transmitter	Power Supply	(Std) 10-28 VDC @ 2.5VA max.115/230VAC 50/60Hz ±15%@ 5VA max. Solar energy
	Velocity	0 ~ ±40 f/s (0 ~ ±12m/s), bi-directional
	Display	4 line×16 English letters LCD back lit, can display total flow, flow rate, velocity and meter run status etc.
	Units Rate Totalized	User Configured (English and Metric); Rate and Velocity Display; (FWD, NET, REV or BATCH) gallons, ft^3, barrels, lbs, liters, m^3,kg
	Output	4~20mA, Pulse, Relay, RS232C or RS485, options: up to 8 GB Data logger, Hart +(4~20mA), Modbus
	Accuracy	±1.0% of reading at rates >0.5 m/s
		±0.005 m/s of reading at rates<0.5 m/s
	Sensitivity	Flow: 0.001f/s (0.0003m/s)
	Repeatability	0.2% of reading
	Security	Keypad lockout, access code enable
	Dimensions	Std.:242*190*115 Weight: <2.5kg
		Exp: 255*220*110 Weight: <5.0kg
Transducer	Liquid Types Supported	Virtually most any liquid containing less than 2% total suspended solids (TSS) or aeration
	Suited Liquid Temperature	Std. Temp. Transducer: -40℃~121℃ High Temp. Transducer : -40℃~150℃
	Cable Length	Std: 20 feet (6m); Opt: Maximum: 990 feet (300m)
	Pipe Size	DN65~DN3000; select S type flange transducers if pipe<DN65

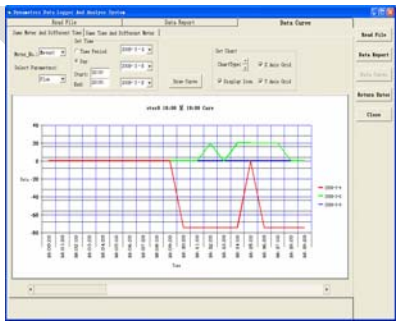
Data Logger and Software Utility

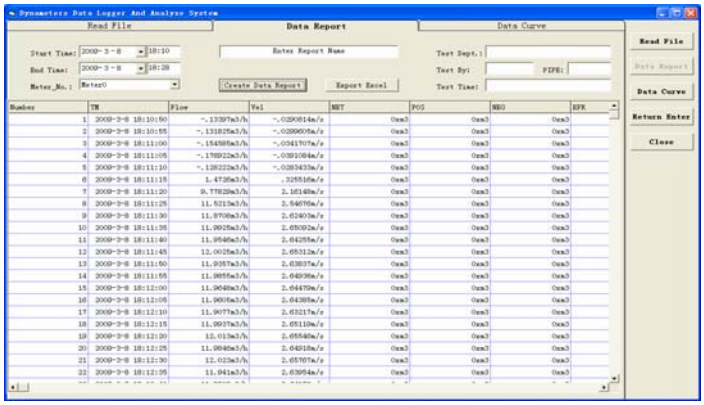
Features:

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 year data with 5 minutes logging interval.
2. Very easy to read data from SD card (just plug it out from Dynameters Data Logger, and run Dynameters Data Logging and Analyze software, browse the SD card file).
3. Data report and Data Curve functions (showed in the right).
4. User can edit and Excel report and print it on PC (showed in the right).
5. Analyze Functions Included (showed in the right).
6. Logging Parameters: Flow Rate, Velocity, Positive total flow, Negative total flow, Net total flow, Total Heat flow, 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.
7. We have two types of data logger, one for dedicated (including DMTFB, DMTFC, DMTFD, DMTFF, DMHF) and Portable (DMTFP) Series, the other for Handheld (DMTFH) Series.

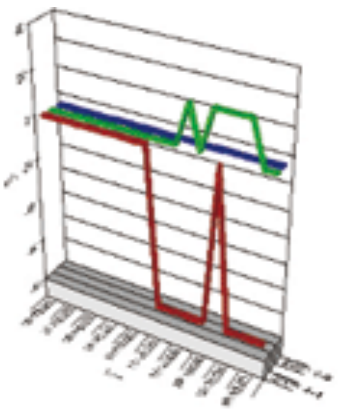


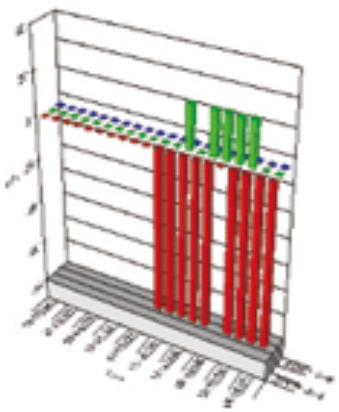






Users can download the software from our website:
www.dynameters.com

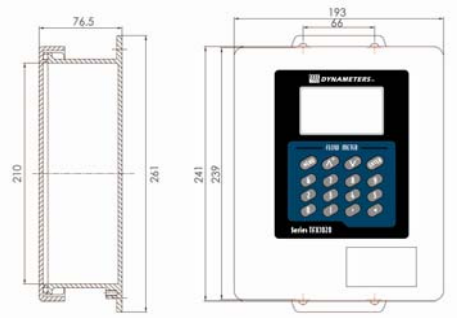


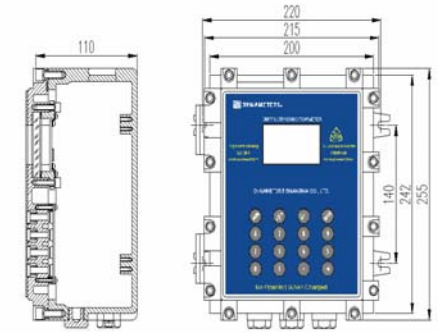


Parts & Dimensions

Standard Transmitter

Explosion-proof Transmitter



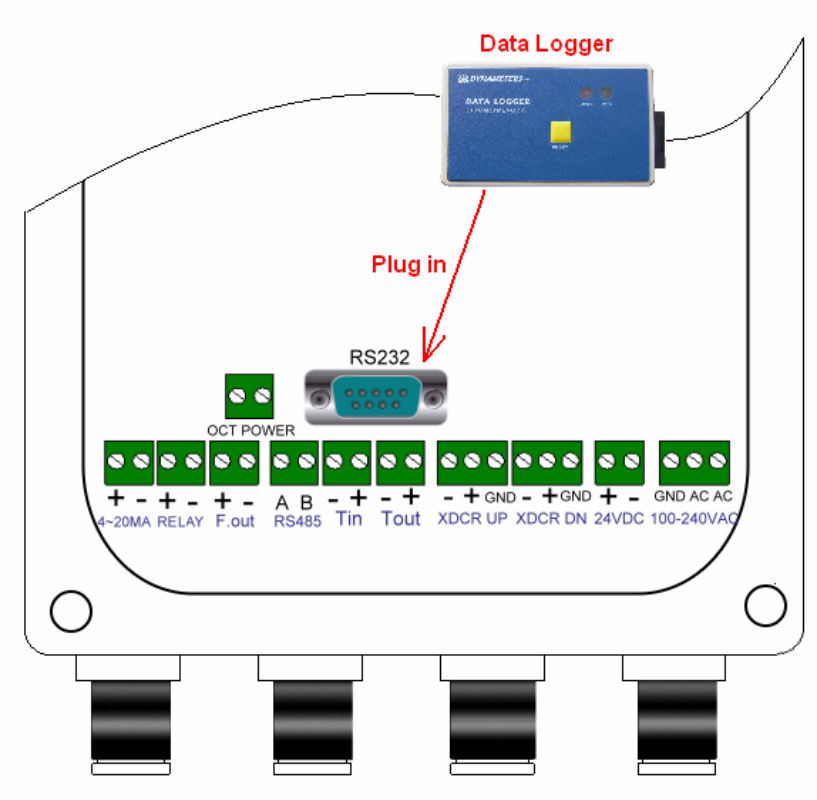


L Transducer

S Transducer

Wiring Terminals

Conduit holes: NPT1/2 and NPT3/4 can been selected.
Housing: NEMA 4 *［IP65］,aluminum alley casting.



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