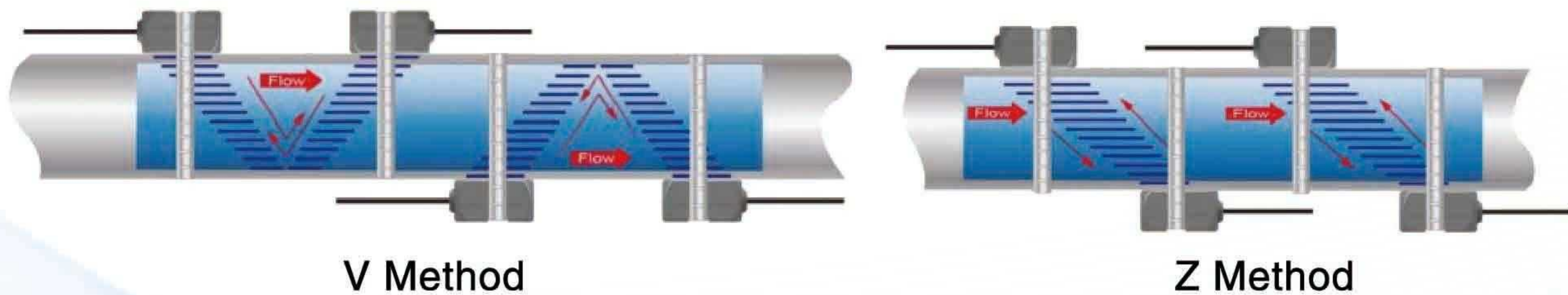


Principle of measurement:

The TF1100 transit time flow meter utilizes two pairs transducers that function as ultrasonic transmitters and receivers. The transducers are installed on the outside of a closed pipe at a specific distance from each other. The transducers can be mounted in V-method where the sound transverses the pipe twice, or W-method (rarely used) where the sound transverses the pipe four times, or in Z-method where the transducers are mounted on opposite sides of the pipe and the sound crosses the pipe once. This selection of the mounting method depends on pipe and liquid characteristics. The flow meter operates by alternately transmitting and receiving a frequency modulated burst of sound energy between the two pairs transducers and measuring the transit time that it takes for sound to travel between the two pairs transducers. The difference between the transit-time is directly and exactly related to the velocity of the liquid in the pipe.



V Method

Z Method

$$V_f = Kdt / TL$$

Where:

- Vf: Liquid velocity
- K: Constant
- dt: Difference in time of flight
- TL: Average Transit Time

Applications:

- Water, sewage (with low particle content) and sea water, water supply and drainage water.
- Process liquids; Liquors.
- Milk, yoghurt milk.
- Gasoline kerosene diesel oil.
- Power supply.
- The flow patrolling and examining.
- Metallurgy, Laboratory.
- Energy-conservation, economize on water.
- Food and medicine.
- Heat measures, Heat balance.
- On-the-spot check-up, standard, the data are judged, Pipeline leak detection.

Wall-Mounted Dual-Channel Flowmeter TF1100-DC



Features:

- Dual channels ultrasonic transit-time sensor for high accuracy 0.5%.
- Easy to install, cost effective, and require no pipe cutting or processing interrupt.
- Wide liquid temperature range: -35°C~200°C.
- Data logger function.
- Thermal energy measurement capability can be optional.
- For commonly used pipe materials and diameters from 20mm to 5m.
- Wide bi-directional flow range of 0.01m/s to 15 m/s.
- User-friendly configuration.
- With the ability of dynamic zero.

Specifications:

Transmitter:

Measurement principle	Ultrasonic transit-time difference correlation principle
Flow velocity range	0.01 to 15 m/s, bi-directional
Resolution	0.1mm/s
Repeatability	0.15% of reading
Accuracy	± 0.5%R
Response time	0.5s
Sensitivity	0.001m/s
Damping of displayed value	0-99s(selectable by user)
Liquid Types Supported	Both clean and somewhat dirty liquids with turbidity <10000 ppm
Power Supply	AC: 85-265V DC: 12-24V
Enclosure type	Wall-mounted
Degree of protection	IP66 according to EN60529
Operating temperature	-10°C to + 60°C
Housing material	Fiberglass
Display	3.5" color LCD display, 16 keys
Units	User Configured (English and Metric)
Rate	Rate and Velocity Display
Totalized	gallons, ft ³ , barrels, lbs, liters, m ³ ,kg
Thermal energy	unit GJ, KWh can be optional
Communication	4-20mA, OCT, Relay, RS485(Modbus), Datalogger, GPRS, NB-IoT
Size	244*196*114mm
Weight	2.4kg

Transducer:

Degree of protection	Standard IP65; IP67, IP68 can be optional
Suited Liquid Temperature	-35°C~200°C
Pipe diameter range	20-50mm for type B; 40-5000mm for type A
Transducer Size	Type B 40(h)*24(w)*22(d)mm Type A 46(h)*31(w)*28(d)mm
Material of transducer	Aluminum + Peek
Cable Length	Std:5m
Temperature Sensor	PT1000 clamp-on Accuracy: ±0.1%

Configuration Code:

TF1100-DC Wall-mounted Dual Channels Clamp On Ultrasonic Flowmeter

Power supply

A 85-265VAC

D 24VDC

S Solar supply

Output Selection 1

N N/A

1 4-20mA (accuracy 0.1%)

2 OCT

3 Relay Output (Totalizer or Alarm)

4 RS232 Output

5 RS485 Output (ModBus-RTU Protocol)

6 Data storage function

7 GPRS

Output Selection 2

Same as above

Output Selection 3

Transducer Type

B DN20-50 -35~200°C

A DN40-5000 -35~200°C

2B DN20-50 -35~200°C, two pairs of sensors

2A DN40-5000 -35~200°C, two pairs of sensors

Temperature Input Sensor

N None

T Clamp-on PT1000(DN20-1000) (0~200°C)

Pipeline Diameter

DNX e.g.DN20—20mm, DN5000—5000mm

Cable length

10m 10m (standard 10m)

Xm Common cable Max 300m (standard 10m)

XmH High temperature. cable Max 300m

TF1100-DC - A - 1 - 2 - 3 /LTDC - 2A - N -DN100 -10m (example configuration)

Description:

Power supply: 85-265VAC; output: 4-20mA, OCT, Relay output; transducer type: 2A for DN40-5000 -35~200°C; without PT1000 temperature sensor; DN100 application; 10m transducer cables.