

Ultrasonic Flow Meter

TFM5100-NG

Wall Mounting, Fixed Type and Battery Powered



Accurate Flow Measurement of Clean Liquids with Non-Contacting Transducers

Non-Contacting Flow Measurement

Ultrasonic transducers mount on the outside of plastic or metal pipes to measure flow rate of clean, non-aerated fluids like water, chemicals, and oils. The clamp on transducers can be mounted without shutting down flow. There is no pressure drop and no obstruction. Transducer separation distance is calculated by the flowmeter according to pipe diameter and wall thickness.

Humanization Desing

Simplicity of operator with magnetic stick; Self-diagnosis of error; Graphical error display; Accumulated flow/heat (positive and negative), instantaneous flow, velocity display in circle.

TFM5100-NG ULTRASONIC FLOW METER

GENERAL SPECIFICATIONS

General Specifications

Operating	: For clean liquids in a full pipes with Less than 1 % solids or gas bubbles, particles
Configuration	: With external keypad
Display	: 96 segments LCD display
Accuracy	: $\pm 0.5\%$ of reading value, Linearity $\pm 0.5\%$, Repeatability: $\pm 0.2\%$
Multi-way Power Sup.	: 3.6V Li battery ; or 8-36VDC power supply, when cut off the power supply, the battery will continue to work.
Outputs	: RS-485, OCT, 4-20mA (optional)
Communication	: MODBUS/METER-BUS protocol, General water meter protocol.
Operating Temp.	: $-10...70^{\circ}\text{C}$
High Protection Grade	: Protection grade up to IP68, can work in 2 m of water
Other Functions	: Automatically record the totalizer data of the day/ month / year; The power-on/off time and corresponding flow rate. Allow manual or automatic flow loss compensation, The instrument working status. Programmable built-in batch controller
Design of General Application	: Length of pipe design bases on general water meter, easy to replace.

Transducer Specifications

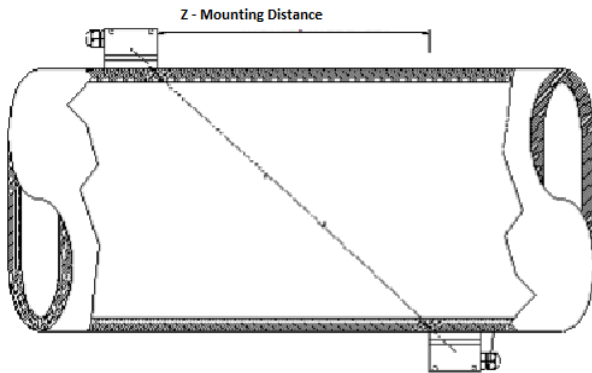
Transducer and Operating Ranges	: TS-1 DN15-100mm ($-30...+90^{\circ}\text{C}$)
	: TM-1 DN50-1000mm ($-30...+90^{\circ}\text{C}$)
	: TL-1 DN300-6000mm ($-30...+90^{\circ}\text{C}$)
	: HTS-1 DN15-100mm ($-30...+160^{\circ}\text{C}$)
	: HTM-1 DN50-600mm ($-30...+160^{\circ}\text{C}$)
Protection	: IP68
Pipe Materials	: Any metal or plastic sonic conducting material including carbon steel, stainless steel, ductile iron, cast iron, PVC, PVDF, fiberglass, copper, brass, aluminum and pipes with bonded liners including epoxy, rubber and Teflon
Transducer Moun. Kit	: Includes set of stainless steel pipe clamps, coupling compound
Cable Lenght	: Standard 6 m

Transducers Installation Methods

The TFM5100-NG Flowmeter works by measuring the “transit time” or “time of flight” for ultrasonic sound pulses transmitted from one transducer to another. Depending on the mounting configuration, the signal may cross the pipe once, twice or four times. The time between transmitted and received signals is precisely measured by the flow meter. Ultrasonic signals are sent upstream and then downstream with the transducers alternating their functions as transmitters/receivers.

The transit time in the direction of flow is always faster than the transit time against the flow. By comparing these differences with precision timing circuits, the TFM5100-NG is able to accurately calculate the flow rate. Because the ultrasonic signal is forced to cross the pipe, an average of the flow profile is calculated. So compensation for laminar or turbulent flow is automatic.

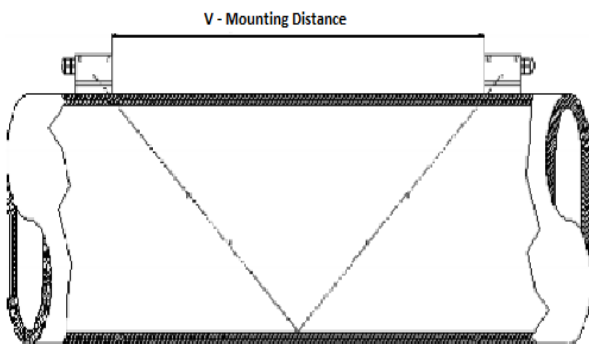
“Z”METHOD



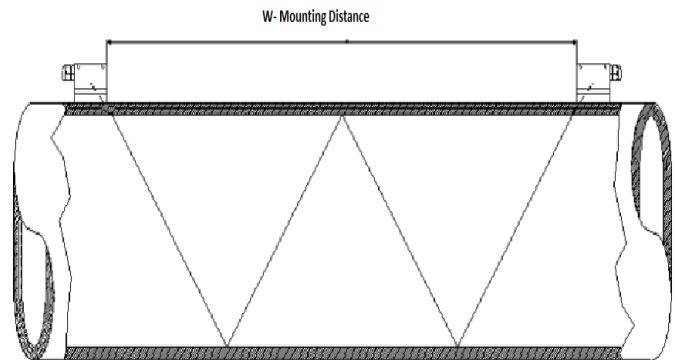
Transducers Installation Methods :

TFM5100-NG transducers can be mounted on vertical or horizontal pipes. The pipe must be full. Choice of V, Z or W mounting method depends on the application and pipe diameter. V-Mount is the most common method while Z-Mount is used for larger pipes or weak signal applications and W-Mount for smaller pipes.

“V” METHOD



“W” METHOD



Ultrasonic Flowmeter TFM5100-NG **for Clean Liquids in Metal and Plastic Pipes**

Easy to Install

Install the TFM5100-NG Transit Time Flowmeter without cutting pipe or shutting down flow. Operates on a wide range of metal and plastic pipe sizes takes just a few minutes to calibrate and start-up.

The flowmeter works by injecting sound through the pipe wall and into the flowing liquid. The transducers transmit ultrasonic signals back and forth. The up and downstream "transit times" are precisely measured and compared to calculate the flow rate. Advanced signal processing software and electronics suppress interference and measure flow with high repeatability and accuracy.

TFM5100 Advanced Features

- It can be used as a flow meter or calorimeter via its 2 inputs for PT100 .
- It is possible remote reading of flow and energy measurement values by using of analog or digital outputs and communication protocols .
- It has a data Logger with 2GB SD card as an option.
- Its ultrasonic transducers are waterproof and designed to operate in wet environments or during accidental submersion.

Recommended For:

- Potable water
- River water
- Cooling water
- Demineralized water
- Water/glycol solutions
- Hydraulic oil
- Diesel and fuel oils
- Chemicals

The TFM5100-NG Transit Time Flowmeter is ideal to measure flow rate of clean, non-aerated fluids in full pipes. Works best on fluids that have less than 2% particulate or gas bubbles.

How to Order Contact an Aktek sales representative in your area or phone one of our sales engineers. Describe your requirements and receive our prompt quotation.

Applications Support Take advantage of Aktek's applications experience. Phone 090-212-621-7200 for advice and information on applications, installation or service for Aktek instruments.

No Risk Appraisal The Aktek TFM5100-NG Transit Time Flow Meter must meet your requirements. Discuss your application with a Aktek representative to arrange a 30-day trial.

The Aktek Guarantee Quality of Materials and Workmanship - Each instrument manufactured by Aktek is warranted against defects in materials and workmanship for a period of one year from date of purchase. Refer to our limited warranty included with each product.



Rep.:

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