

TRANSIT TIME ULTRASONIC FLOW METER/CALORIMETER with Clamp-on Ultrasonic Transducers

TFM3100-F1

Displays, Totalizes

Transmits and Controls

Backlit LCD Display Simple – 4 key Calibration
Password Protected
4-20mA/Pulse/Relay /RS485 Outputs
Modbus, M-Bus Communication Protocols



Non-Contacting Flow Measurement

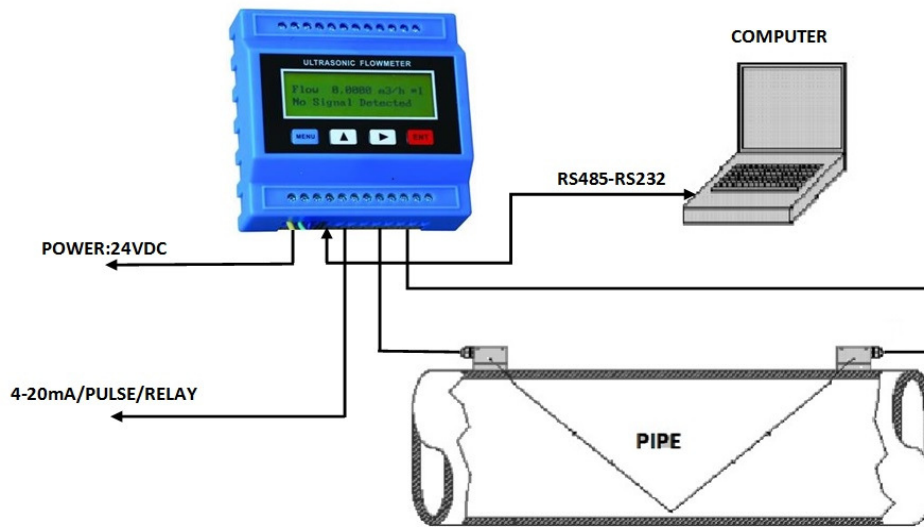
Ultrasonic transducers mount on the outside of plastic or metal pipes to measure flow rate of clean, non-aerated fluids like water, chemicals, and oils. The clamp on transducers can be mounted without shutting down flow. There is no pressure drop and no obstruction. Transducer separation distance is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

User-Friendly Operating System

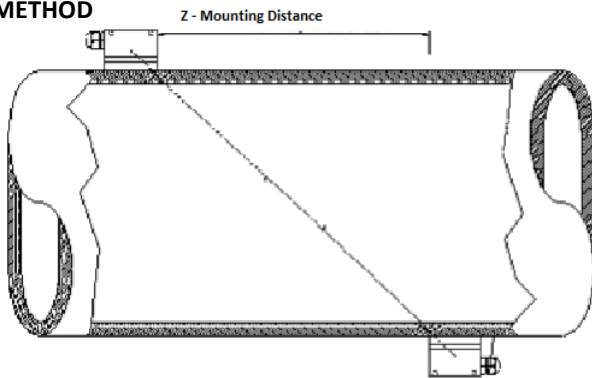
Use the built-in keypad for fast, easy calibration with menu selection of pipe diameter, wall thickness, pipe material, liner material, liner thickness, liquid type, mounting method, and measurement units (gallons, liters etc.) Calibration values and totalizer are retained during power interruptions.

The TFM3100 – F1 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 TFM3100-F1 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.



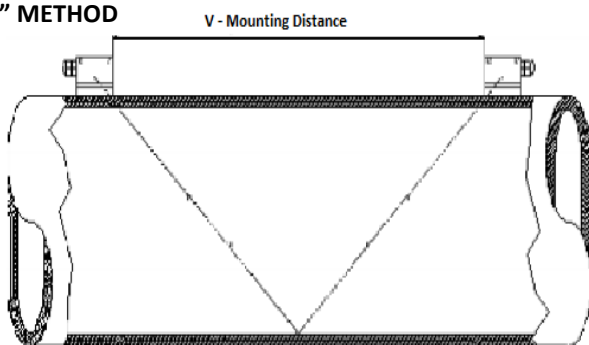
“Z”METHOD



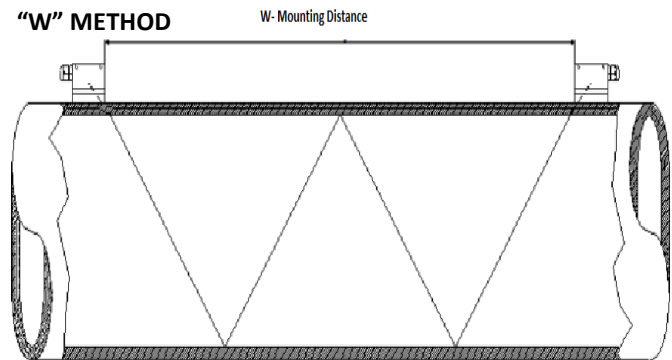
Transducers Installation Methods :

TFM3100 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



TFM3100-NG ULTRASONIC FLOWMETER

GENERAL SPECIFICATIONS

General Specifications

Operating	: For clean liquids in a full pipes with Less than 1 % solids or gas bubbles, particles
Configuration	: With built-in keypad
Display	: Alphanumeric 2 x 20 digits LCD with backlit
Accuracy	: $\pm 1\%$ of reading value, Linearity $\pm 0.5\%$, Repeatability: $\pm 0.2\%$
Power Supply	: 24 VDC
Outputs	: 4-20 mA, Pulse, Relay, RS485 Serial Port
Communication	: MODBUS
Operating temp.	: -20...50 °C
Protection	: IP 20

Transducer Specifications

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 and operating ranges	: TS-1 DN15-100mm (-30...+90°C) TM-1 DN50-1000mm (-30...+90°C) TL-1 DN300-6000mm (-30...+90°C) HTS-1 DN50-600mm (-30...+160°C) HTM-1 DN50-600mm (-30...+160°C)
Transducer Moun. Kit	: Includes set of stainless steel pipe clamps, coupling compound
Cable Lenght	: Standard 6 m

Popular Options

Resistance thermometer for use of Calorimeter (Pt-100)
Different cable lengths, on request

Ultrasonic Flowmeter TFM3100—F1

for Clean Liquids in Metal and Plastic Pipes

Easy to Install

Install the TFM3100-F1 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.

TFM3100-F1 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 .

-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 TFM3100-F1 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 TFM3100-F1 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.



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