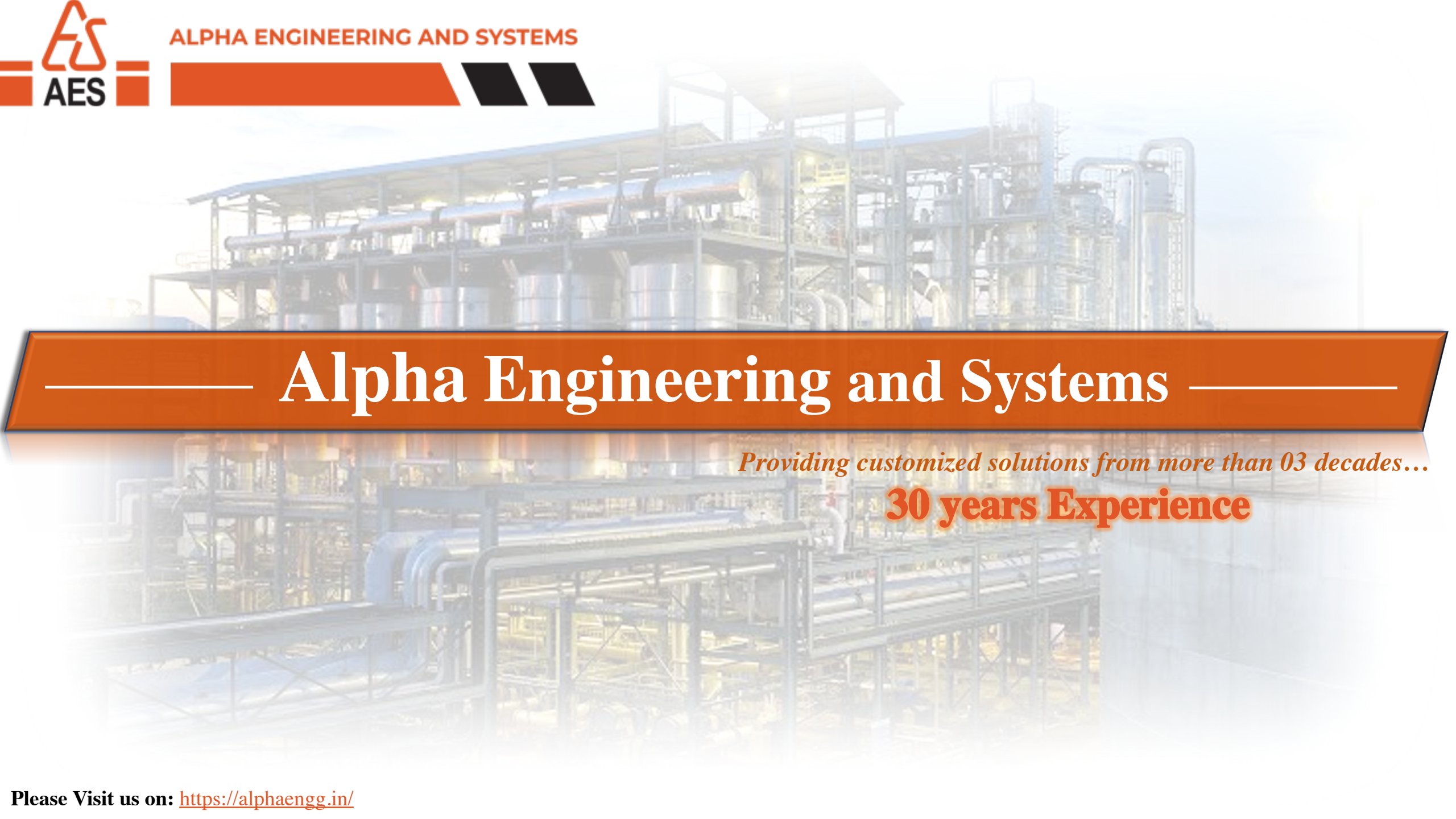

ALPHA ENGINEERING AND SYSTEMS

AES

Alpha Engineering and Systems

Providing customized solutions from more than 03 decades…

30 years Experience

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Preface

Alpha Engineering & System provides comprehensive Products and solutions to Automation Industries since 1992. Company has more than 28 years of experience in Flow meters , sensors, transmitters, Gauges , signal and instrument cables and other hardware solutions

Alpha Engg. is a leader in supply of all the instrumentation items required to run a low cost plants to the most advanced automotive plants.

High level Quality control and compliance with National and in International Regulations are the maintained

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AES

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Vision

- ✓ *Continuous product & system development is essential to strengthening competitiveness.*
- ✓ *About 2.5% of total sales are invested annually in R&D, resulting in 05–10 new product launches a year.*
- ✓ *For AES , service is a total concept that covers everything.*
- ✓ *From supplying the smallest spare part to being a lifetime performance partner*

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Related Industries

Paper Industry

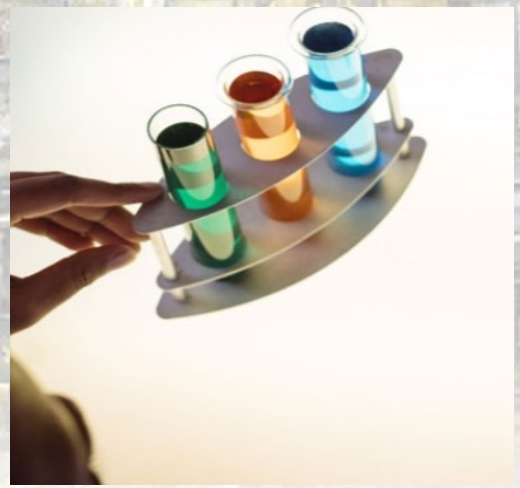
Distilleries

Food and Beverages

Milk Plants

Sugar

Steel



Chemical

Pharma

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Hand Held Ultrasonic Flow Meter

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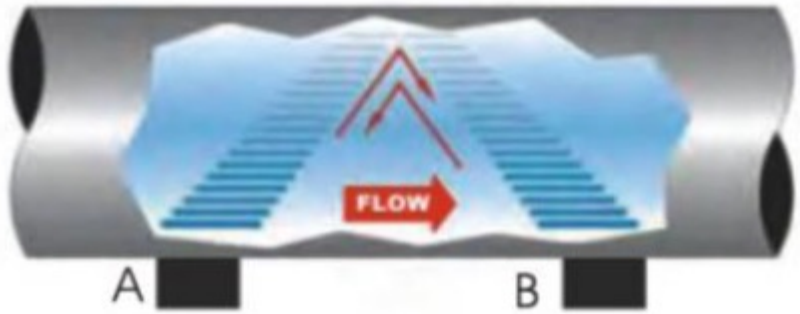
Principle of Measurement

The Flowmeter operates by alternately transmitting and receiving a frequency modulated burst of sound energy between the two Transducer s and measuring the time interval that it takes for sound to travel between the two Transducers. The difference in the time interval measured is directly related to the velocity of the liquid in the pipe.



Transit-Time V-mode Configuration

$$V_f = Kdt / TL$$

Where:

V_f	Liquid velocity
K	Constant
dt	Difference in time of flight
TL	Average Transit Time

Clamp On vs Regular UFM

- *Portable flow meters can be installed, removed, and transported easily.*
- *The Transducers are a non-contacting, clamp-on type, which provides benefit of non-fouling operation and easy installation.*
- *Clamp-on devices are not in contact with the measured material and have no moving parts, which greatly increases their lifetime.*
- *Clamp-on devices can be recalibrated relatively quickly. This leads to even lower maintenance costs and more reliable measurements.*
- *Installing the meter on the outside of the pipe wall eliminates the problem of pressure loss, which can occur with inline measurements.*

Our Product

Transmitter	Specifications
Principle of Measurement	Principle of Transit Time, DSP technology and MultiPulse Transducer Technology
Repeatability	0.2%
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
Response Time	0-999 seconds, user-configurable
Velocity	±12 m/s
Pipe Size	DN 12mm-DN 4570mm
Rate Units	Meter, Feet, Cubic Meter, Liter, Cubic Feet, Gallon, Imperial Gallon, Oil Barrel, Liquid Barrel, Imperial Liquid Barrel, Million Gallons. User configurable.
Totaliser	7-digit totals for net, positive and negative flow respectively
Security	Setup values Modification Lockout. Access code needs unlocking
Display	4x16 English letters
Communication Interface	RS-232C, baud-rate: from 75 to 57600.
Transducers	S1 (15-100 mm), M1(50-700 mm) and L1(300 -4570 mm)
Transducer Cable Length	Flexible Cable, standard 4 meters, optional 8 meters

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Our Product

Power Supply	3 AAA Ni-H built-in batteries. When fully recharged it will last over 12 hours of operation. 100V-240VAC for the charger
Data Logger	Options: SD card data (up to 8GB based SD card capacity) logger and software, can connect to PC run windows, read and edit data table. User can select memory interval freely as needed.
Manual Totaliser	7-digit press-key-to-go totaliser for calibration
Housing Material	ABS
Ingress Protection	IP 52
Case Size	203x101x34mm
Handset Weight	550g with batteries
Transducer	**Specifications**
Liquid types	Virtually most any liquid containing less than 2% total suspended solids (TSS) or aeration.
Liquid temperature	-40 to 121 Deg.C. (Optional -40 to 250 Deg.C.)
Transducer Cable Length	Flexible cable, standard 4 meters, (opt) 8 meters
Pipe material	All kind of steel and cast iron, PVC etc.

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Types of Transducers

Types	Picture	Spec.	Model	Measurement Range	Temperature	Dimension
Clamp on		Small Size	TS-2	DN15~DN100	-30~90°C	45×25×32mm
		Medium Size	TM-1	DN50~DN700	-30~90°C	64×39×44mm
		Large Size	TL-1	DN300~DN6000	-30~90°C	97×54×53mm
High Temperature Clamp on		Small Size	TS-2-HT	DN15~DN100	-30~160°C	45×25×32mm
		Medium Size	TM-1-HT	DN50~DN700	-30~160°C	64×39×44mm
		Large Size	TL-1-HT	DN300~DN6000	-30~16°C	97×54×53mm
Mounting Bracket Clamp on		Small Size	HS	DN15~DN100	-30~90°C	318×59×85mm
		Medium Size	HM	DN50~DN300	-30~90°C	568×59×85mm
		Extended	EB-1	DN300~DN700	-30~90°C	188×59×49mm
High Temperature Mounting Bracket Clamp on		Small Size	HS-HT	DN15~DN100	-30~160°C	318×59×110mm
		Medium Size	HM-HT	DN50~DN300	-30~160°C	568×59×110mm
		Extended	EB-1-HT	DN300~DN700	-30~160°C	188×59×49mm

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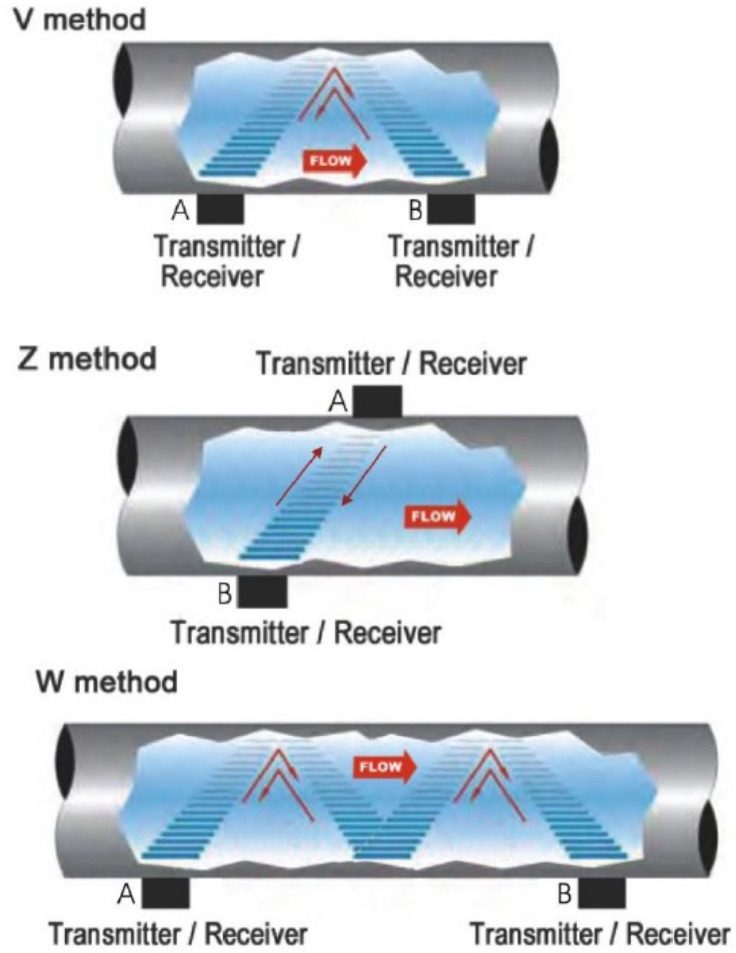
Mounting Mode of Transducer

- ***V Mount** is the most widely used mode for daily measurement with pipe inner diameters ranging from 20 millimeter to 300 millimeter. It is also called standard mode or method.*

- ***Z Mount** is commonly used when the pipe diameter is between 300 millimeters and 4500 mm. If the meter displays error code or low signal strength and bad signal quality, for instance, some old pipe etc., user should select Z Mount.*

- ***W Mount** is usually used on plastic pipes with a diameter from 10 mm to 50 mm.*



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Features

- *Cost effective and versatile*
- *High accuracy ±1.0% reading*
- *Non invasive, no moving parts, no pressure drop, no maintenance*
- *Easy and economical installation, no pipe cutting*
- *Wide measurement range 0 ~ 12m/s*
- *Wide pipe size range (DN 15 ~ 4570mm)*
- *Suitable for all commonly used pipe materials*
- *Bi-directional measurement. Totalizer display for net, positive and negative flow*
- *Ideal for both clean and opaque liquid flow measurement*

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Applications

- *Chemical, Petrochemical and Process Industries*
- *Fertilizers Industries*
- *Pharmaceutical Industries*
- *Food and Drug Industries*
- *Sugar, Beverage Industries*
- *Paper and Pulp Industries*
- *Water and Waste Water Management*
- *Dredging Industries*
- *Mining Industries*

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Warnings

- *Pipe parameters entered must be accurate; otherwise, the Flowmeter will not work properly.*
- *During the installation, apply enough coupling compounds in order to stick the Transducer onto the pipe wall.*
- *While checking the signal strength and Q value, move the Transducer slowly around the mounting site until the strongest signal and maximum Q value can be obtained.*
- *If the signal strength is always displayed as 0.00, that means there is no signal detected. Thus, it is necessary to check that the parameters (including all the pipe parameters) have been entered accurately.*
- *Check to be sure the Transducer mounting method has been selected properly, the pipe is not worn out, and the liner is not too thick.*
- *Make sure there is there is indeed fluid in the pipe or the Transducer is not very close to a valve or elbow, and there are not too many air bubbles in the fluid , etc. With the exception of these reasons, if there is still no signal detected, the measurement site has to be changed.*